

## It's Important to Know In Time'

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The Newspaper of the Industry

*Production Tools for Victory*  
**AIR CONDITIONING & REFRIGERATION**



*Technical Governmental*

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## Inside Dope

By George F. Taubeneck

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### Refrigerated Tramp Ships

England has long had an excellent fleet of refrigerated cargo vessels for the transport of meat, fruit, and other perishable foodstuffs. These vessels are normally fast liners. It takes longer than usual to build them, and in time of war there is extraordinary demand for exceptionally fast ships.

So, faced with the dilemma of having more marine refrigeration equipment available than refrigerated liners to accommodate it, the English have begun putting refrigeration equipment into slower, 10,000-ton ships of the "tramp" variety.

These shambler ships have a refrigerated storage capacity of 250,000 to 300,000 cubic feet, as compared with the 400,000 cu. ft. capacity of the regular refrigerated transports.

### Insect Control

The British have also made interesting applications of refrigeration to control insect infestation of foodstuffs. Through scientific control of temperature and humidity, they are protecting all manner of food not formerly thought "perishable."

For example, this development is being given credit for having made bread rationing unnecessary, through its protection of wheat and flour stockpiles against insect pests.

### Stedman Goes South

Gerald Stedman, the philosopher of merchandising, was in our offices the other day to talk over things before going South for a period of time.

Friends may reach him henceforth at the Hotel Patten, Chattanooga, Tenn.

While down there he is going to work on an assignment to study the "Industrial South in Relation to Postwar Development," along with other research and writing.

This study of the New Industrial South should prove to be very fruitful, indeed. The strides the people of Dixie have taken toward development of their natural resources (including tractable labor) during the last couple of years are amazing.

Anyone who is thinking in terms of post-war markets geographically must revise all previous statistics on the South. It's a whole new story down there now.

Stedman is admirably equipped to make the study. We hope to get him to write something for us while he's down there.

### Simplification

Now that "concentration of industry" programs have been shelved, look for renewed emphasis on "simplification." Fewer models, fewer parts, "war models" of most everything will be planned.

Industry advisory committees and "task forces" are to get an opportunity to do some real work on these simplification programs. The whole thing will be worked out by industry itself, rather than by theorists who have never made the products in question.

Big point to simplification program (Concluded on Page 4, Column 1)

# L-38 IS COMPLETELY REVISED

## Used Refrigerator Prices Raised

### Guarantees Are Changed; Ceiling Put on Rentals

WASHINGTON, D. C.—Maximum Price Regulation No. 139 (Used Household Mechanical Refrigerators) has undergone a sweeping revision that will become effective April 15, and which will increase prices on many models in addition to liberalizing the guaranty provisions.

"The new regulation," declared an OPA press announcement, "was made to assist dealers in repairing and selling used mechanical refrigerators in the face of the growing shortages of manpower and materials . . . and is expected to result in the release of many thousands of used refrigerators that have been held in dealers' stocks since the original regulation was issued in May, 1942."

Following are some of the principal changes made in the revision: Increases are made in maximum prices of some, but not all models in the list for which specific dollars and cents prices are given.

All listed prices for 1938 models have been advanced either \$21 or up to 70% of list price new, whichever is lower.

1942 models have had ceiling prices boosted to 75% of list price when new, compared with 70% previously.

The guaranty period for reconditioned models is shortened to 90 days. The guaranteed refrigerators

It is probable that the revised Maximum Price Regulation No. 139, with all the new schedules for used mechanical refrigerator models, will be made available with one of the next issues of Air Conditioning & Refrigeration News.

are given the same ceiling prices previously applying to sales with a one-year guaranty, and where one-year guaranties are still given there may be added to the new 90-day guaranty maximum prices \$5 for 1939 and later models, and \$10 for those of 1938 and earlier.

Sales of used refrigerators by individual householders are brought under price ceilings for the first time. Dollars and cents control is also inaugurated for rentals of mechanical refrigerators.

"To assist dealers in repairing and selling used mechanical refrigerators in the face of the growing shortages of manpower and materials, the Office of Price Administration today made a general revision of its regulation governing price ceilings and conditions of sale on these refrigerators.

"The new regulation, which liberalizes the guaranty provisions, is expected to result in the release of many thousands of used refrigerators that have been held in dealers' stocks since the original regulation was issued in May, 1942.

"Under these new provisions, the guaranty period for reconditioned models is shortened to 90 days. The guaranteed refrigerators are given the same ceiling prices previously applying to sales with a one-year guaranty, and where one-year guaranties are still given there may be added to the new 90-day guaranty (Concluded on Page 5, Column 1)

### OPA Survey Reveals No Need of Rationing Locker Storage Foods

WASHINGTON, D. C.—In the 4,600 frozen food locker plants in the country, used almost exclusively by farmers, there is only 1% or less of the U. S. meat supply, a quantity not large enough to restrict by ration, an OPA survey has revealed.

The OPA conducted the survey because there was some question as to how locker-stored meat would be handled under the rationing program. Because of the small quantity of meat found in the lockers, OPA considers it insignificant in comparison with the 14 billion pounds of rationed meat that will be available to civilians in 1943. As a result, it has been decided to treat the meat as though it were in a refrigerator in the owner's home.

The 4,600 commercial locker plants average 300 locker and the lockers, each of which holds about 200 pounds of food, upon examination, showed more than half the space used for the storage of fruits, vegetables, poultry, fish, and game produced by farmers for their own consumption.

Consequently, OPA points out, the quantity of meat in lockers is too small to justify the inconvenience it would cause all consumers either to have it declared or to place any legal restriction on its use.

Food may be removed from locker plants without the surrender of ration points by the patron. But families that use meat from frozen storage for use at their own tables are being asked to retain voluntarily in the family's ration books any red stamps they do not spend because they have been able to use food the farm has provided.

### Part of Chicago Conference Plans Are Completed

CHICAGO—Program for the "Refrigeration Industry Wartime Conference" to be held here April 13 and 14 is rounding into shape, with the National Refrigeration Supply Jobbers Association last week announcing the program for its eighth annual meeting, which will be held in conjunction with the Conference. The meeting will be held at the Palmer House.

All elements within the industry are invited to attend the meeting—dealers, servicemen, supply jobbers, distributors, and manufacturers.

As the plans now stand, the N.R.S.J.A. will hold its meeting on Tuesday, April 13, with a general meeting on April 14. At this general meeting it is planned to have an open (Concluded from Page 6, Column 4)

### Why This Issue Will Reach You Late

The news about the revision of Limitation Order L-38 and L-126 did not reach AIR CONDITIONING & REFRIGERATION NEWS until such time as the issue would normally be going on the press—consequently, in order to get the text of these important orders to readers with this issue a considerable delay has been necessary.

Also, it was necessary to "re-make" much of the issue, so that the material is scattered throughout the issue. Text of Order L-38 will be found on pages 16, 17 and 18. Text and schedules of the amended L-126 will be found on pages 2, 3, 6, 15, 18.

## Now They're Beginning To Wonder If Donald Nelson Even Said 'Refrigerators'

WASHINGTON, D. C.—Donald Nelson's "statement" about the likelihood of a resumption of refrigerator production, allegedly made the weekend of March 20, was blowing around on the wings of the March wind last week—starting from nowhere and getting no place.

In fact, there seemed to be some doubts that Mr. Nelson had mentioned the word "refrigerator" at his March 19 press conference. One report in the public press of March 23 declared:

"In Washington there appeared to be considerable confusion as to what Mr. Nelson did say and there were reports that a clarification of his remarks would be forthcoming.

"According to advices received here, the official stenographic report of the questions and answers in his press conference failed to reveal any mention of refrigerators, but it was regarded as possible that the stenographer might have missed the reference to them. The Durable Goods Division of the WPB was bombarded with questions from manufacturers who wanted further information on the projected resumption of manufacture, but the division was unable to answer them.

"According to further check-up in

the industry and with WPB officials, as the matter now stands the WPB will release from the present stockpile of some 400,000 boxes about 145,000 for sale to the public between April 1 and 15. In another three or four months it is possible that a similar number will be unfrozen.

"As far as resumed manufacturing is concerned, some WPB officials apparently hold the belief that the size of the stockpile should be maintained, and have discussed the possibility of the manufacture of small-size, standardized War models. The current stockpile is composed mainly of expensive, 7 cu. ft. and larger deluxe models, totally unsuited for defense housing and low incomes. If War models were permitted, they would probably be made by the smaller manufacturer, as all the large companies have torn out their refrigerator production lines and could not possibly put them back now."

What WPB Chairman Nelson supposedly said was that the WPB was reorganizing its whole thinking about civilian economy, and that plans had been made to bring back into production "a number of consumers' products such as refrigerators . . . the production of more household refrigerators being necessary to cope with the food problem."

## Greater Control Is Placed Over Part Distribution

### Industry Gets Own Form For Priority Assistance To Replace the PD-1A

WASHINGTON, D. C., March 27—General Limitation Order L-38 was amended today in such a way as to affect the operations of all dealers and other elements in the industry as well as manufacturers, by providing stricter control over the production and deliveries of all refrigerating and air conditioning machinery and equipment except household refrigerators and farm milk coolers.

The amended order combines the original L-38 with four amendments to it previously issued, and makes significant changes in the procedure for obtaining ratings and authorizations. Included with the order are lists naming equipment that may or may not be produced, or may be delivered to specific users; a list naming the purposes for which equipment may be manufactured, and a list naming categories of users of "comfort cooling systems" to whom repair parts, new or used, cannot be delivered except under certain conditions.

At the same time the WPB amended Limitation Order L-126, altering Schedules I, II, and III covering self-contained drinking water coolers, refrigeration condensing units, and coil or tube assemblies for condensers or coolers; and adding new Schedules IV "refrigeration valves, fittings, accessories, and other parts," Schedule V "commercial reach-in and walk-in refrigerators," Schedule VI "refrigerant and service connections." (An outline of the provisions of the amended L-126 and texts of the various schedules may be found throughout this issue.)

The new L-38 restricts the delivery of any new or used parts (a) for emergency repair service as defined in the order and to fill purchase orders bearing a rating of AA-4 or higher, or (b) to fill an authorized purchase order, or (c) for direct use by the armed services. All replaced parts made of metal must be delivered by the owner to the dealer or producer, if required, or disposed of through a scrap dealer within 30 days.

The refrigerating system for a farm milk cooler may be obtained by the manufacturer of such coolers only on an "authorized order." The subsequent delivery of such completed coolers is not restricted by this order.

The delivery of any new parts regardless of how they were acquired for inventory (other than for emergency repair service) can only be made on an "authorized order."

Application on the new Forms PD-830 or PD-831 (in place of PD-1A and others used previously) for authorization to purchase equipment is considered only if it is to be used for an essential use as described on (Concluded on Page 20, Column 1)

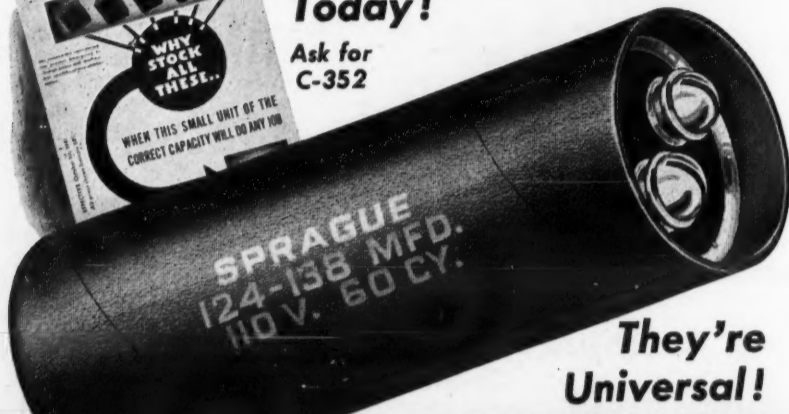
## We can deliver MOTOR-STARTING CAPACITORS

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**SPRAGUE** PRODUCTS COMPANY  
North Adams, Mass.

## Amended Order L-126 Allows For The Issuance of More Specifications Schedules

Part 1071—Industrial and Commercial Refrigeration and Air-Conditioning Machinery and Equipment.  
[Limitation Order L-126 as Amended March 27, 1943]

Issuance of Required Specifications Schedules.

Section 1071.2 Limitation Order L-126 is hereby amended so as to read as follows:

The fulfillment of requirements for the defense of the United States has created a shortage in the supply of iron, steel, copper, brass, bronze, and other critical materials for defense, for private account and for export; and the following order is deemed necessary and appropriate in the public interest and to promote the national defense:

§ 1071.2 Limitation Order L-126—(a) Definitions. For the purpose of this order and all schedules issued pursuant thereto:

(1) "System" means any refrigerating or air conditioning system consisting of an assembly or combination of machinery, equipment, or other apparatus designed primarily to lower the temperature of, or remove water vapor from gaseous, liquid or solid matter, directly or indirectly, by mechanical, chemical, or physical means. The term shall not include a domestic mechanical refrigerator as defined in paragraph (a) (2) or a domestic ice refrigerator as defined in paragraph (a) (3) of this order.

(2) "Domestic mechanical refrigerator" means any refrigerator for household use which operates either by compression or absorption and which has a net capacity of 16 cubic feet or less (National Electric Manufacturing Association rating) but does not include any low temperature mechanical refrigerator designed for the storage of frozen foods or for the quick freezing of food where the low temperature compartment customarily operates at a temperature of not higher than 15 degrees above zero Fahrenheit and contains 75% or more of the total refrigerating space in the refrigerator.

(3) "Domestic ice refrigerator" means

any non-mechanical ice chest or ice box for home use.

(4) "Person" means any individual, partnership, association, business trust, corporation, governmental corporation or agency, or any organized group of persons, whether incorporated or not.

(5) "Required specifications" means specifications fixed for systems or parts to eliminate, reduce, or conserve the use of critical materials in such systems or parts, by standardizing the systems or parts, or specifying the operating conditions under which such systems or parts may be used, or by restricting the number of sizes, types, models or forms produced or kinds or quantities of materials used by a producer, or requiring substitution of less critical materials for more critical materials, or establishing other requirements for the manufacture, sale, delivery, installation, or use of such systems or parts.

(6) "Copper" means unalloyed copper metal. It shall include unalloyed copper metal produced from scrap.

(7) "Copper base alloy" means any alloy metal in the composition of which the percentage of copper metal by weight equals or exceeds 40% of the total weight of the alloy. It shall include alloy metal produced from scrap.

(8) "Advanced base" means any place outside of the 48 states of the United States and the District of Columbia.

(b) Issuance of schedules of required specifications. The War Production Board may from time to time issue schedules establishing required specifications. Upon and after the issuance of any such sched-

ule, no person shall manufacture, assemble, sell, deliver, or install any new system or new parts except in accordance with the terms of such schedule, and no person shall purchase, receive, install, or use any new system or new parts which he knows or has reason to believe were not manufactured, assembled, sold, delivered, or installed in accordance with the terms of such schedule.

(c) Appeals. Any appeal from the provisions of this order, and from the provisions of Conservation Orders M-9-c or M-126 that may be applicable to any system, parts, or other equipment subject to the terms of this order, shall be made by filing one letter in triplicate, referring to the particular provision appealed from and stating fully the grounds of the appeal.

(d) Applicability of regulations. This order and all transactions affected thereby are subject to all applicable regulations of the War Production Board, as amended from time to time, except to the extent that any provision of this order may be inconsistent therewith, in which case such provision of this order shall govern.

(e) Communications. All reports to be filed and other communications concerning this order should be addressed to: War Production Board, General Industrial Equipment Division, Washington, D. C. Ref: L-126.

(f) Violations. Any person who wilfully violates any provision of this order, or who, in connection with this order, wilfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime, and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using, material under priority control and may be deprived of priorities assistance.

Issued this 27th day of March, 1943.

## Schedule I to L-126 - - Specifications For Self-Contained Water Coolers

Part 1071—Industrial and Commercial Refrigeration and Air Conditioning Machinery and Equipment.

[Schedule I to Limitation Order L-126, as Amended March 27, 1943]

Required Specifications for Self-Contained Drinking Water Coolers

Section 1071.3 Schedule I to Limitation Order L-126 is hereby amended so as to read as follows:

§ 1071.3 Schedule I to Limitation Order L-126—(a) Definitions. For the purpose of this schedule:

(1) "Producer" means any person who produces, manufactures, processes, fabricates or assembles self-contained drinking water coolers for supplying drinking water for human consumption.

(2) "Self-contained" means a single cabinet or housing for a drinking water cooler containing or manufactured to contain two or more of the following assemblies:

(i) Water cooling low side or evaporator with or without controls.

(ii) Bubbler valve fountain assembly or assemblies, or glass- or pitcher-filler assembly or assemblies.

(iii) Electric refrigeration condensing unit with or without controls.

(3) "Bubbler type" means any type of self-contained drinking water cooler which is designed primarily for supplying drinking water through or by means of a sanitary bubbler or drinking fountain.

(4) "Design of cabinet enclosure" means a particular combination of cabinet enclosure or housing, low side or evaporator, drain receptor or receptors, bubbler valve assemblies, and glass or pitcher filler assemblies. Any change in the size or location of any of these items constitutes a change in design.

(b) Required specifications. Pursuant to Limitation Order L-126 the following required specifications are hereby established for self-contained drinking water coolers:

(1) Types, sizes, and capacities. The following types, sizes, and capacities of self-contained drinking water coolers are hereby established:

Size	Capacity, Minute Period Minimum		Maximum Fixture Equipment Authorized
	Minimum	Peak Load Capacity in 15	
5	5 g.p.h.	1.87 gals.	1 bubbler assembly and 1 glass-filler.
10	10 g.p.h.	3.75 gals.	2 bubbler assemblies and 1 glass-filler.
20	20 g.p.h.	7.50 gals.	2 bubbler assemblies and 1 glass-filler.

Note: Type A cooler capacities are based on the use of a waste water pre-cooler using 60% spill. The above specified capacities are based on an ambient temperature of 100° F. while reducing water from 100° F. inlet to 50° F. outlet drinking water.

(2) Restrictions of materials. (i) In the manufacture of self-contained drinking water coolers, no producer shall use:

(a) Aluminum;  
(b) Block tin tubing, or tin coatings;  
(c) Alloy steel, stainless steel, monel, or other nickel alloy metals, except in refrigerant and electric controls, and then only provided that such use is limited to the minimum amount practicable;

(ii) In the manufacture of self-contained drinking water coolers (exclusive of condensing units, motors, controls, and wiring) no producer shall use copper or copper base alloy except in the following parts:

(a) Low sides,  
(b) Pre-coolers,  
(c) Bubbler valves,  
(d) Water valves,  
(e) Water lines,  
(f) Liquid and suction lines,  
(g) Refrigerant or temperature controls.

(h) Glass- or pitcher-fillers; and the aggregate weight of copper or copper base alloy used in all such parts contained in any such water coolers shall not exceed the respective maximum quantity set forth below:

or the assembly and delivery of such coolers solely from parts which had on said date been cast, fabricated, formed, or processed in such manner that their manufacture or assembly in conformity with this schedule would be impractical (or the acceptance of such coolers from such a producer).

(d) Effective date. This amendment shall become effective on and after April 6, 1943.

Issued this 27th day of March, 1943.

**CORDLEY**  
Electric  
**WATER COOLERS**  
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MEET GOVT. SPECS.

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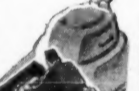
This advertisement is one of a series appearing in leading national publications including Time, Business Week, United States News and Industrial and trade publications with total circulation of nearly 1½ millions. This program is a potent weapon to help Contractors sell Westinghouse Air Conditioning and Industrial Refrigeration for vital war needs.



**BETTER AIR FOR BETTER AIR POWER.** Many aircraft parts must be so accurate that air conditioning is used in manufacturing to provide required rigid control of temperature, humidity and air cleanliness.



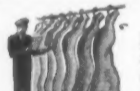
**TASK TROOPS FROM MARS.** Parachute cloth is tested under government specified air conditions. For this and for protecting stored 'chutes from drying and mildew, air conditioning is used.



**MACHINE SHOP IN HADES.** At a huge U. S. Base repair shop overseas, where 120° F. outdoors is common, air conditioning is used to make indoor working conditions tolerable, and for mechanical precision.



**BRIDGE OF SHIPS.** To insure perfect fit of matched sets of huge propulsion gears for cargo ships, gears are cut at a temperature held constant by air conditioning through the entire operation of several days.



**FOOD IS A WEAPON.** An army fights on its stomach. In processing, storage and in the distribution of food to our forces fighting on distant fronts in every part of the world, Industrial Refrigeration is an important factor.

Planes. 'Chutes. Repair Bases. Ship Gears. Food. Just a few of the countless war essentials on which Westinghouse Air Conditioning and Industrial Refrigeration are usefully employed. More and more producers are discovering how controlled temperature, humidity and air cleanliness mean uniform quality, precision, fewer rejections, faster production.

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# Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)  
grams is the release of manpower, and the better turnover in materials use. If two models can be made to do the work for six, you've saved just that much material in inventories.

## Piece Work

Many people believe that the manpower problem could be solved by putting war production labor on a piece-work basis. If men were paid for what they turned out instead of by the hour, their production rate would go up so fast that millions might be released for the armed services, farms and other necessary work—or so we are told by people who should know.

Rickenbacker has recently come out with talk along this line.

There's no question but what "incentive pay" is what make the world go 'round—and ahead. The whole trend, however, is toward removal of incentives.

Some type of non-pay incentive awards may be worked out for labor, but piece-work pay probably will get nowhere so long as labor remains as politically powerful as it is today. Piece-work pay steals the union's thunder; the union leaders would like all increased pay to come about as a result of their efforts, rather than the efforts of the worker.

## Inflation

Economists have been crying "Wolf! Wolf!" about inflation for the last several years. We've been experiencing it, too, but in a mild form only.

Here she comes, though. Hang onto your hats, boys, because it's going to be a fast ride.

Hopes are high that it won't get "out of hand," but the curve is going to rise much more sharply if John L. Lewis, the Railroad Brotherhoods, the CIO, and the Farm Bureau all get their way.

And, as usual, it looks as if they will. Maybe they won't get all they ask for, but they'll get enough to start all wages and prices spiraling upward again.

As we said in a recent editorial, it looks as if we might as well gear our thinking to the eventuality of two-bit dollars.

## Good Criticism

One of our subscribers recently made some pertinent comment, and jacked us up properly, on some recent stuff in this column. We quote letter and answer:

Vilner Mfg. Co.  
Milwaukee, Wis.

Editor:

I was interested in your March 1 issue first because of its comments on P-126 which definitely reflect my personal sentiments as against the exact wording of paragraph (K) (1) of CMP Reg. 5 which reads, "The preference ratings assigned by this regulation shall supersede the preference ratings assigned by all orders in the 'P' series for maintenance, repair and operation supplies—except as may be otherwise provided by amendments of such orders specifically providing to the contrary." If P-126 is still to be operative there should be some official statement for the good of the industry.

Your column, "Inside Dope" was also interesting because the military analyst states that, "The Russians have won no major victories as yet," whereas later under the Hitler-Tojo deal we find "The battle of Stalingrad may go down in history as a decisive battle of World War No. 2." I do not know which keeps us guessing more, the war or the priorities.

R. J. Panlener, Manager  
Price & Data Section

ANSWER: Your observations on the "Inside Dope" column were well taken, because they are indicative of slipshod writing.

It ought to have been stated this way: "The Russians have won no major victories as yet in their offensive campaign."

The Stalingrad battle was indeed a victory, although it was a defensive

one. The next thing to a major victory in their subsequent offensive campaign was the occupation of Kharkov—which they weren't able to hold. The Russian successes are encouraging, but far from decisive thus far.

## From Punch

Best laugh of the week comes from "Punch," the hardy London humor magazine. Underneath a cartoon of two headwaiters and a dining room is the cutline:

"Now what shall we do? The inspector who comes to see that we don't serve too much for our rations is dining with the official who comes to see that we don't serve too little for our cover charge."

It could happen here.

## Ogden's Problem

Lorenzo Richards, president of the Boyle Furniture Co. of Ogden, Utah, writes us as follows:

"We have been a constant reader of your magazine REFRIGERATION NEWS, and certainly have profited by the splendid material which it carries.

"From past issues we recognize that your publication is interested in problems confronting distributors,

wherever they may be. Our community has a very serious problem in supplying consumers' goods of all types, and especially at the present time household goods, because of our tremendous increase in population and because of the new homes being constructed under private supervision and also under direct governmental building.

"We trust you will find it possible to give a little editorial space to the enclosed pamphlet, which we know is accurate and unbiased."

The pamphlet points out that since the 1940 census Ogden's population has gone up 100%, its payrolls 140%, its freight carloadings 366%, yet its retail sales are up only 68%. There is a terrific shortage of everything, food, clothing, housing, supplies, etc. What's more, they expect the population to expand another 100% (over 1940) within the next few months!

Friends in the Office of Civilian Supply, War Production Board, please note.

## What Next?

Observers often note that governmental controls adopted here have previously been applied in England. Hence, to prepare for the future, industrialists study present practices in our British ally's economy.

To beat the gun even further, however, it might be wise to study Germany. Nearly all of Britain's economic controls had their origins in Germany. That may sound funny, but we can cite you chapter and verse in substantiation.

If we are to proceed on this hypothesis, a new German internal-

economy move might prove interesting. Germany has found that increased production can no longer be gained by raising wages, because the workers at last have learned they can't buy anything extra with their additional money. Getting smart, they figure: "Why work so hard if we can't get anything tangible for our efforts?" So, absenteeism increased.

Germany is now cutting wages, so that laborers will have to work harder just to earn bare living subsistence.

It probably won't happen here, but it is reported that the British are studying this idea with no little interest.

## Don Nelson Applies The Golden Rule

Chairman Donald M. Nelson has sent the first of a series of policy letters to employees of the War Production Board. The text, which follows, should evoke loud hoorays from all subscribers who run into government red tape.

"During 1943, the War Production Board faces increased problems growing out of our principal job—gearing the national economy to an all-out war effort. In this, the first of a series of letters to keep all of you more familiar with WPB policies, I want to discuss one of these problems: the role WPB must fill as a service organization.

"We have the task of putting through the largest war production schedule in history—a program which staggers the imagination. We must also provide essentials for the

civilian population.

"In a letter to the Murray Committee I said:

"A war economy is an economic and political structure which will insure the minimum of goods and services necessary to keep the population alive, healthy, and functioning effectively and will insure that everything else, men, machines, and materials, that can be directed against the enemy is so directed."

"But adjusting to such an economy is difficult, and industry needs help in getting its job done with a minimum of questionnaires, forms, and red tape.

"So we have a definite responsibility in dealing with the public and industry. This is not the responsibility of any one group in our organization. Everyone in WPB—whatever his job—is, in the fullest sense of the word, a public servant.

"Answering mail promptly, returning telephone calls at once, giving vigorous help in filling out forms and questionnaires, seeing that office visitors get help quickly—these jobs may seem tedious, but to the individual involved they are often of the greatest importance.

"While such responsibilities may often become onerous, it is precisely at such times that we must exert extra effort. Anyone can do an easy job; the test of a good WPB employee is whether he can perform with courtesy and precision when the going gets tough.

"Let me suggest this principle: In the face of any call for help, let's do the job we would want done if we ourselves were on the other end of the request."

# HOTPOINT Cited War-time

**Here Are Some of  
the Advertisements That  
Won the Citation from the  
Treasury Department**

**WE** are proud of this citation and letter recognizing Hotpoint's contribution to War Bond Sales. And we're gratified too that the central idea of our campaign is the same as that used in much of the Treasury Department's own 1943 campaign, which features the slogan, "Buy Still More War Bonds Now For The Things You'll Want When Victory Comes."

*Our New*

...and Bo

*My War Bond Savings Will Buy a HOTPOINT  
ELECTRIC KITCHEN Like This*

*Two OTHER DAY at Red Cross a new light dawned when one of the girls told me how surprisingly little she paid for her Hotpoint Electric Kitchen. Why, the money we are saving every month by investing in War Bonds will buy that Electric Kitchen after Hotpoint finishes its war job and starts making home appliances again. And believe me, I can hardly wait... In my new kitchen all my work will be like play!*

*and it's the FIRST Thing I'll Get AFTER the War!*

UNITED STATES TREASURY DEPARTMENT

For distinguished service  
War Savings Program

**Edison General Elec**

*Given under my hand and seal*

TREASURY DEPARTMENT  
WASHINGTON

February 6, 1943

Mr. W. A. Grove  
Edison General Electric Appliance Company, Inc.  
2400 West Taylor Street  
Chicago, Illinois

Dear Mr. Grove:

It gives me great pleasure to transmit to you the enclosed citations, signed by the Secretary of the Treasury, in recognition of your outstanding services to the War Bond campaign.

Sincerely yours,  
*Thomas H. Lane*  
Chief, Advertising Section  
War Savings Staff

REFRIGERATORS  
RANGES  
WATER HEATERS  
WASHERS AND IRONERS  
CLOTHES DRYERS  
AUTOMATIC DISHWASHERS  
ELECTRASINK  
STEEL CABINETS

Buy War Bonds Today—  
**Hotpoint**

## Used Refrigerator Prices Revamped; Guarantees Changed; Rentals Covered

(Concluded from Page 1, Column 2)  
maximum prices \$5 for 1939 and later models and \$10 for those of 1938 and earlier.

"Simultaneously OPA announced a tightening up of controls in this field by bringing sales of used refrigerators by individual householders under price ceilings for the first time. Dollars and cents price control is also inaugurated on rentals of refrigerators, with maximum rental rates fixed for the most popularly price-classed refrigerators at \$2.50 to \$4.50 monthly and a delivery and pick-up charge of \$5.50 also allowed.

"Standards of reconditioning are simplified; a special price provision is made when new or factory rebuilt units are sold with the used refrigerators; an easier formula is provided for pricing 1940 and earlier models not specifically given dollars-and-cents ceilings, and certain maximum prices have been revised upward to correct inequities prevailing previously.

"The new regulation will be effective April 15, providing ample time to inform the trade and consumers generally of the changes, which are embodied in Revised Maximum Price Regulation No. 139 (Used Household Mechanical Refrigerators).

"Under the original regulation price control over used refrigerators was confined to sales in the course of trade or business, and private owners

could sell at any price they could get. Now ceilings will be the same for householders as for dealers.

"This action is aimed primarily, it was said, at certain evasive practices that have appeared in the trade, and that are encouraged by occasional sales at exorbitant prices by private owners in areas of acute shortage. Similar action was taken in the regulation of used typewriter prices last summer, it was recalled, and more recently in controlling used vacuum cleaner prices. Used washing machine prices will shortly be regulated in similar fashion.

### How Prices Are Raised

"Specifically the changes in the revised regulation include:

"1. Increases have been made in maximum prices of certain models in the list for which specific dollars and cents prices are given. The readjustments reflect comparable values in other models during the base period.

"2. All listed prices for 1938 models have been advanced either \$21 or up to 70% of list price new, whichever is lower. This is to take care of the additional responsibility of reconditioning assumed by dealers due to the expiration of the 5-year warranty of the manufacturer.

"3. All 1942 models have had ceiling prices increased to 75% of list price when new, compared with 70%

previously. The impact of war conditions upon many householders who are forced to dispose of refrigerators purchased during the past year is recognized by OPA as calling for an upward adjustment in ceilings on 1942 models.

"The revision also establishes a more logical trend of recent values, each successive year receiving higher average values. Ceilings for 1940 and earlier models are specified in dollars and cents in the regulation, while 1941 models are continued at ceilings representing 70% of the original price. The formula prices are for refrigerators reconditioned and guaranteed for 90 days. When sales are made of 1941 or 1942 used refrigerators 'as is,' \$3.50 must be deducted from the maximum price. If the refrigerator is sold with a one year guaranty, \$5 may be added to the maximum price.

### New Guaranty

"4. The general guaranty for a reconditioned used refrigerator has been reduced from one year to 90 days, with the same prices, except for the revisions now made, established for the 90-day guaranty reconditioned models as previously existed for the one-year guaranty reconditioned refrigerators.

"5. The previous lists of ceilings on 'unreconditioned but cleaned, checked

and 90-day guaranteed' refrigerators are abolished. The only other listed prices than those for one-year guaranteed reconditioned refrigerators are those for 'as is' used refrigerators, which generally remain as in the original regulation.

"6. Guaranties may still be given for one year on reconditioned used refrigerators if desired. In these instances \$5 may be added to the listed ceiling price for 1939 and 1940 models, and \$10 may be added to the ceiling price for 1938 or earlier models. Under a guaranty any defective part must be replaced without charge.

"7. Reconditioning standards have been modified to assist dealers in meeting them and to make elaborate testing equipment unnecessary so that the small repair shop will be able to recondition used refrigerators according to the specifications with greater facility. In place of the previous 21 points specifying requirements and procedures of repair there have been substituted four general points relating only to performance, equipment and refinishing. The aim has been to give the reconditioner the greatest possible leeway so as to assist him in meeting manpower and material shortages.

"8. A new provision is added for establishing ceilings on models not specifically listed, under which the maximum price is taken for the model corresponding most closely. This change provides another important simplification, relieving dealers of the burden of extensive computation and references to special published materials previously called for.

"9. A new provision is added for

setting ceilings on used refrigerators with factory-rebuilt units, and sold with a one-year guaranty. The ceiling will be the 'as is' listed price plus the manufacturer's net suggested resale maximum price in effect in March, 1942, or subsequently specifically approved by OPA, for the replacement unit contained in the refrigerator. If no manufacturer's suggested resale price was in existence in March, 1942, or later approved by OPA, the net cost to the dealer for the replacement unit can be added to the 'as is' listed price, plus the dollar mark-up taken for the sale of the most comparable item in March, 1942.

### Ceilings on Rentals

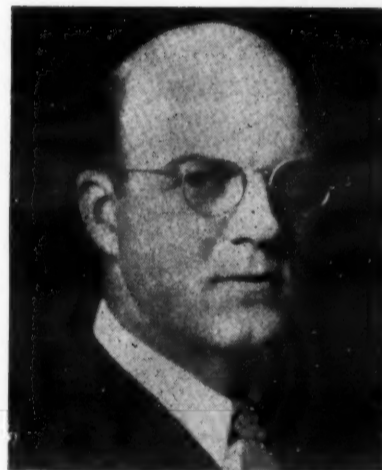
"10. Ceilings on rentals of used refrigerators are established for the first time. These ceilings are also listed in dollars and cents, with the maximum monthly rental rate fixed on the basis of approximately one-twentieth of the maximum sale price for the refrigerator when sold reconditioned with a 90-day guaranty. Where delivery and pick-up service is rendered an additional amount not exceeding \$5.50 may be added to the rental rate.

Bulk of the rental cases will be on the basis of \$2.50 to \$4.50 per month. Service of the refrigerators without extra charge must be guaranteed during the rental period. Rental ceilings have been inaugurated to counteract any attempts at evading sale ceilings by going into a rental business and also because of growing demands for rented used refrigerators, particularly in war industry areas.

"11. A new provision has been added to prohibited practices, specifically banning offers to sell or rent a refrigerator only on condition that the buyer agrees to pay the seller a certain amount for repair parts, or services.

"12. A simplified tagging requirement has been substituted for the label previously called for on each refrigerator being offered for sale.

## Bechaud To Head Sales For Ben-Hur Products



A. B. BECHAUD

MILWAUKEE—A. B. Bechaud's appointment as sales manager of Ben-Hur Mfg. Co. has been announced by Herman Uihlein, Jr., president of the company. The Ben-Hur company makes a new-type farm refrigerated locker plant.

Bechaud, at one time was owner of the Bechaud Brewing Co., and was a member of the national board of the brewing industry.

In the earlier days of the airplane he developed a low-cost plane, the "Traveler." Subsequently, he designed a fluorescent light fixture and has worked recently on other mechanical devices.

Bechaud now joins Ben-Hur and will help develop its products and market with an eye particularly to postwar trade.

## Crosley Nets Nearly \$2 Million in 1942

CINCINNATI—Crosley Corp. reports a net profit in 1942 of \$1,931,659, after all charges, as compared with a net profit in 1941 of \$1,493,134.

Based on net sales during 1942 of \$43,142,078, the net profits for 1942 amounted to 4.4% of billings, after taxes, while 1941 net profits, after taxes, amounted to 5.5% of billings. Net sales in 1941 were \$27,171,880.

Provision for federal income and excess profits taxes in 1942 amounted to \$4,274,597. Of this amount \$389,333.96 is subject to postwar refund and is included in the 1942 profit figure.

# For Outstanding Advertising!

## Hotpoint is Again On The BOND WAGON For 1943!

### NATIONAL ADVERTISING

Naturally, Hotpoint will follow up the success of the 1942 advertising program which was so enthusiastically acclaimed by utility companies, large retailers and official Washington. The program not only will be continued, but will be expanded in 1943, with four-color advertisements in *Life*, *Collier's*, *Ladies' Home Journal*, *American Home*, *Better Homes & Gardens*, *House Beautiful* and *Brides Magazine*—PLUS...

### Use This New Wartime Promotion Program

STIMULATE War Bond Sales, and help yourself as well, with this new plan book. Full of ideas—for instance, the "Home Planning File", featured in Hotpoint's magazine advertising. Co-operate in this program. While it speeds Victory, it is building peacetime prosperity and employment.



### NEW FARM ADVERTISING

America's two leading farm publications, *Country Gentleman* and *Farm Journal*, will carry special color pages through 1943, to help support the Government's War Bond Program for farmers, and to help build a post-war farm market for Hotpoint Electric Kitchens. Also, regular pages will be used in *Electricity on the Farm*. When the war ends, American farmers will be prosperous and able to buy. Because of Hotpoint's extensive program they will be familiar with the great advantages of Hotpoint Electric Kitchens for farm use and be willing as well as able to buy them.

### LOCAL ADVERTISING PLANS

For your own spring promotions, you will find this program made to order. The 1943 "Bond Wagon" Plan Book tells how to use Hotpoint's War Bond advertising theme in your own newspaper advertising and in customer contacts. See your Hotpoint distributor or factory representative. Edison General Electric Appliance Co., Inc., 5632 W. Taylor St., Chicago, Ill.



Electric Kitchens Tomorrow!

## ELECTRIC KITCHENS

## Schedule III to L-126 Sets Specifications on Tube Assemblies For Coolers or Condensers

Part 1071—Industrial and Commercial Refrigeration and Air Conditioning Machinery and Equipment.  
[Schedule III to Limitation Order L-126, as Amended March 27, 1943]  
Required Specifications for Coil or Tube Assemblies for Refrigeration Condensers or Coolers.

Section 1071.5 Schedule III to Limitation Order L-126 is hereby amended to read as follows:

§ 1071.5 Schedule III to Limitation Order L-126—(a) Definitions. For the purpose of the schedule:

(1) "Producer" means any person who produces, manufactures, processes, fabricates or assembles any coil or tube assemblies for refrigeration condensers or coolers.

(2) A "coil or tube assembly for condensers" means an assembly used in a refrigerating or air conditioning "system" as defined in paragraph (a) (1) of Limitation Order No. L-126 consisting of any arrangement of pipes, tubing, pressure vessels, or plates by means of which heat is removed from the vaporized refrigerant.

(3) A "coil or tube assembly for coolers" means an assembly used in a refrigerating or air conditioning "system" as defined in paragraph (a) (1) of Limitation Order No. L-126 consisting of any arrangement of pipes, tubing, pressure vessels, or plates by means of which heat is absorbed by either a volatile refrigerant or a non-volatile medium such as water.

(4) "Protective coating" means a surface coating applied to any or all parts of a "coil or tube assembly for condensers or coolers" for the purpose of retarding or preventing corrosion.

(5) "Integral fin tubing" means finned tubing, the fins and tubes of which are formed from the same piece of metal by extrusion or by any machine operation.

(6) "Metallic fin bond" means a tie between tubing and fins obtained through the use of a metallic base substance usually applied with heat. The fin surface of integral fin tubing shall be considered as having a metallic fin bond.

(7) "Mechanical fin bond" means a tie obtained between tubing and fins by physical contact and without the use of a metallic base substance.

(8) "Fin height" means the distance from the outside of a pipe or tube to the nearest outside edge of the fin.

(9) "Return bend" means a semi-circular section of tubing or pipe used to join parallel runs of tubing or pipe.

(10) "Lend-lease country" means the government of any foreign country receiving aid pursuant to the Act of March 11, 1941, entitled "An Act to Promote the Defense of the United States" (Lend-Lease Act).

(b) Required specifications. Pursuant to Limitation Order No. L-126, the following required specifications are hereby established for coil or tube assemblies for condensers or coolers:

(1) In the manufacture of any coil or tube assembly for condensers or of any coil or tube assembly for coolers, no producer shall, except for use abroad ship,

(i) Use any non-ferrous metals, except for soldering or brazing materials, for protective coatings, or for any coil or tube assembly for water cooled condensers as defined in paragraph (b) (3) of this schedule.

(ii) Use any seamless steel tubing, except

(a) To form integral fin tubing, or

(b) That which has been made into return bends but only if the radius thereof is less than  $1\frac{1}{2}$  times the outside diameter of such tubing and the straight extensions thereof are not longer than 2 times the outside diameter of such tubing; or

(iii) Use any steel tubing (other than integral fin tubing) of wall thickness greater than the following:

	Wall thickness maximum inch
(a) Up to & including $\frac{3}{8}$ "	0.028
(b) Over $\frac{3}{8}$ " up to & including $\frac{1}{2}$ "	.035
(c) Over $\frac{1}{2}$ " up to & including $\frac{3}{4}$ "	.049
(d) Over $\frac{3}{4}$ " up to & including 1"	.065
(e) Over 1" up to & including $1\frac{1}{4}$ "	.083

(f) Over  $1\frac{1}{4}$ " up to & including 2"... .095  
(g) Over 2" up to & including  $2\frac{1}{2}$ "... .120  
Provided, That where external refrigerant working pressures exceed 400 lbs. per sq. in. gauge, a producer may use a wall thickness in excess of the foregoing but not to exceed the thickness being used by him on Sept. 2, 1942.

(2) In the manufacture of any coil or tube assembly for air-cooled condensers no producer shall

(i) Except for use aboard ship, use finned tubing (other than integral fin tubing) having an average fin thickness to the nearest U. S. standard gauge in excess of 4% of the fin height, or a maximum of 0.023", whichever is smaller;

(ii) Except for use aboard ship, use a metallic protective coating (other than paint) where a mechanical fin bond is employed;

(iii) Use a protective coating containing more than 7% tin where a metallic fin bond is employed;

(3) In the manufacture of any coil or tube assembly for water-cooled condensers, no producer shall, except for use aboard ship

(i) Use more than 7 lbs. of non-ferrous metals per condensing unit nominal horse power for all self-contained refrigeration condensing units; **Provided, however,** That where, for the purpose of simplification, one condenser is designed to be used with either of two or more self-contained condensing units, not more than 9.0 lbs. of non-ferrous metals per condensing unit nominal horse power of the smaller unit may be used.

(ii) Use more non-ferrous metals per ton of refrigeration, for other than self-contained condensing unit condenser assemblies, than the following:

7 lbs. per ton of refrigeration for systems having saturated refrigerant vapor suction temperatures above 30° F.

8 lbs. per ton of refrigeration for systems having saturated refrigerant vapor suction temperatures from 0° to 30° F., inclusive.

9 lbs. per ton of refrigeration for systems having saturated refrigerant vapor suction temperatures below 0° F.

"Ton of refrigeration," as here used, means the removal of heat, at the low side, at the rate of 12,000 B.t.u. per hour; total tons to be based on the design operating load of the low side connected to the condensing unit or units with which the condenser is used.

(4) In the manufacture of any coil or tube assembly for evaporatively cooled condensers, no producer shall:

(i) Use finned tubing (other than integral fin tubing) having an average fin thickness to the nearest U. S. standard gauge in excess of 4% of the fin height, or a maximum of 0.023", whichever is smaller; or

(ii) Use a combination protective coating and metallic fin bond containing more than 7% tin.

(5) In the manufacture of any cooler coil or tube assembly for air-cooling, no producer shall:

(i) Use a metallic protective coating containing more than 7% tin, except that when the coil is used in food storage and the air passing over the coil is in direct contact with the food a hot-dipped galvanized coating or a coating containing not more than 35% tin may be used and except also that for use aboard ship in connection with food storage the use of protective metallic coatings is not restricted by this paragraph; or

(ii) Used finned tubing (other than integral fin tubing) having an average fin thickness to the nearest U. S. standard gauge in excess of 4% of the fin height, or a maximum of 0.023", whichever is smaller.

(c) Applicability of order. (1) The required specifications established by paragraph (b) (1) to (5) inclusive, shall not prohibit:

(i) The production, fabrication, delivery, acceptance, or installation of coil or tube assemblies, the plans of which had on Sept. 2, 1942, been drawn and accepted by or for the account of the Army or Navy of the United States, the Maritime Commission, the War Shipping Administration, or Lend-Lease countries, or

(ii) The use (in the production or fabrication of, or the delivery, acceptance, or installation of coil or tube assemblies for condensers or coolers) or any of the following materials in a producer's possession or control or in transit to a producer on Sept. 2, 1942:

(a) Steel tubing.

(b) Coil or tube assemblies which on said date were in finished form or the parts for which had on said date been cast, machined or otherwise processed in such manner that the manufacture of such assemblies in conformance with this Schedule III would be impractical.

(d) Effective date. This amendment shall be effective on and after April 6, 1943. Issued this 27th day of March, 1943.

## Questions Invited For Industry Meeting April 13-14 on Priority Problems

(Concluded from Page 1, Column 4)

discussion of priority problems and probabilities on the production of various types of refrigeration equipment under existing conditions.

In the original announcement of the Conference, refrigeration supply jobbers were advised to send such questions as they may have to Fred B. Hovey, executive secretary of the National Refrigeration Supply Jobbers Association, at the association's headquarters at 28 N. Clark St., Chicago. Since there has been no further announcement of any other committee or organization that would serve as a depository for questions submitted by other branches of the industry, it is probable that they should be sent to Mr. Hovey.

Following is the N.R.S.J.A. program as announced last week:

Tuesday, April 13

9:30 a.m.

Meeting called to order.

"The Purpose of the Conference," Alex H. Holcombe, Jr., president, N.R.S.J.A.

"Obtaining Material on PD-1X Applications," Sterling A. Warren, Industrial and Hardware Supplies Branch, WPB.

Discussion of Questions to be submitted to manufacturers as to production and priorities.  
2:00 p.m.

"WPB Orders Affecting Refrigeration Supply Jobbers," Sterling F. Smith, Chief, Refrigeration and Air Conditioning Section, General Industrial Equipment Division, WPB.

"The Operation of the Controlled Materials Plan in the Refrigeration Industry," J. W. Krall, Manager, Refrigeration, Detroit Lubricator Co.

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*Electric Water Coolers*  
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VALVES AND FITTINGS  
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Healthful Living Through Home Frozen Foods

... bringing America Vitamin-Rich Diet ... the year-'round!

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NATIONALLY FAMOUS INDUSTRIAL DESIGNER

Among the many promised marvels in the "home of tomorrow" will be a NEW kind of home refrigeration. It will revolutionize food buying habits. It will bring America a new idea in healthful vitamin-food variety all the year 'round.

That's a promise which even now is approaching reality in Ben-Hur New

Products Division, where designers and engineers are admiring the striking beauty of a new "Prophecy" Home Locker Plant.

Today, at Ben-Hur—it's "all out" War Production. But, when "V-Day" is here we will be ready with this "new sensation in food preservation."

BEN-HUR MFG. CO., 634 E. Keefe Avenue Milwaukee, Wis.  
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FARM LOCKER PLANT . . .



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ACCURATELY made fittings or parts by NIBCO save substantial sums in assembly costs. Accuracy is truly a religion here. Specially designed equipment operated by men who are instinctively fine craftsmen make precision manufacture almost automatic. Constant inspection with individual gauge testing of every item makes it positive. Get our Catalog No. 613. Some of the 1000 items and sizes of our standard fittings shown there may be just what you need. Whenever you require special tubular or cast parts, you can be sure of absolute uniformity and highest quality when they're made by NIBCO.

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## Emergency Service Suggestions On Valves, Controls, Solenoids

Exact Replacement Will Not Always Be Necessary

By J. W. Krall, Sales Manager, Refrigeration and  
Air Conditioning Division, Detroit Lubricator Co.\*

A detailed discussion on service as we normally recognize the term, covering a complete refrigeration system, entails a great many things that could not possibly be explained in one paper. War emergency repairs brought about by the curtailment of the manufacture of parts would even require more time. Therefore, in the interest of clarity, let's confine this portion of the discussion to Expansion Valves, Controls, and Solenoids in the order mentioned.

Before proceeding any farther, consider the refrigeration service man. You will remember that at one time the average mechanic considered himself capable of answering service calls and performing various functions to correct the difficulty. Unfortunately, these average mechanics were to a certain extent chiselers and did not do the profession too much credit. On the other hand, we had included among service men the individual who can rightfully be called a refrigeration service engineer. These kept that portion of the industry clean and were conscientious, and can very well be compared with the physician. When a service call came in the complaint was properly diagnosed before any remedy was prescribed. The prescription took care of the complaint as it existed and did not cover any imaginary ailments.

To illustrate the parasites of the refrigeration service industry—Mr. Sharpknife, the butcher, puts through a hurried call because his refrigeration equipment is not operating. The so-called service man walks into the meat shop and is informed by Mr. Sharpknife that the refrigeration plant will not run. He immediately goes to the pressure or temperature control, whichever it may be, takes off the cover, recognizes the trouble which I will explain later, corrects it with one sweep of the hand, puts back the cover and then decides that he is on the job and had better stay at least long enough to earn himself a good fee.

If the highside happens to be in the basement he picks a comfortable box, sits down with a hammer in one hand and probably that morning's newspaper in the other and as he reads he pounds either on the cast iron base of the compressor or on the piping, or anywhere to simulate labor which is supposed to be indicative of considerable activity. After doing this for a half hour to an hour, he walks upstairs with a worried look on his face, checks the coils, probably takes off the Expansion Valve and changes it, does some more pounding and by then at least two hours may have elapsed so he returns to the basement, throws the main switch in and the equipment starts.

The trouble—a cockroach decided to go for a stroll, crept under the cover of the control and happened to rest for a moment on the open contacts. When the system called for

more refrigeration he was electrocuted. By his very death he placed about \$20 of Mr. Sharpknife's money into circulation.

Emergency repairs would not interest individuals of that kind because it is questionable whether they would consider keeping essential refrigeration in operation as their patriotic duty during these times. As a matter of fact, there are probably very few of these chiselers left. They didn't have very much money invested in the industry, consequently when the manufacturing plants offered high wages and paid premiums for overtime they quickly packed up their hammer and screwdriver and are now working at jobs that they know best. But to the rest of you, let's proceed.

### Expansion Valves

Let's first analyze what was considered the early Expansion Valve and the various steps that bring that refrigeration accessory up to the present time. Many years ago a hand-valve was used to serve this purpose. In packing plants when refrigeration was needed an individual would crack a hand-valve just far enough to give the necessary refrigeration and when temperatures were lowered sufficiently the valve was shut off. This performance was repeated as frequently as necessary.

The next step was probably the Automatic type of Expansion Valve that had one function—to maintain a constant temperature in the coil without the need of manual operation.

From the Automatic we went to the Thermostatic type of Expansion Valve that kept the coil completely refrigerated under all conditions and performed this function automatically.

From these basic principals developed many glorifying features that gave greater efficiency with less current consumption and eliminated hazards of operation. An important step was an Expansion Valve containing an orifice consistent with the B.t.u. capacity of the system. Maximum operating pressures limiting the overload on the motor became known and were accepted throughout the industry.

To keep up with the times, valves were manufactured with restricted capacities in order to cut down costs. Capacity information was published very accurately, usually based on a 3 to 4° superheat change to provide fast response. All of these things are important and during normal times should be very carefully considered, however, as of the present there should be one ultimate aim and one only—get refrigeration of some kind at least until the proper part can be obtained.

Automatic and Thermostatic Expansion Valves are the two types being used today, and they have but one function—to feed refrigerant into the coil. Low-sides equipped with Automatic Valves will operate just as well, and in a great many applications, better with Thermostatic types. Therefore, do not hesitate to replace an Automatic Valve with a Thermostatic when necessary.

In like manner, a Thermostatic Valve may be replaced with the Automatic type. The result very often will not be as satisfactory, but refrigeration can be continued—danger of spoilage and damage averted until another Thermostatic Valve can be obtained.

Do not hesitate to use a non-adjustable Thermostatic Valve instead of an adjustable model if necessary. Valve adjustments after installation are not required on at least 90% of the jobs, nevertheless, if an adjustment is necessary the same result can be obtained by relocating the feeler bulb.

If flooding over is observed, move the bulb closer to the valve. If the coil is starving move the bulb farther away from the valve. Bear in mind that the feeler bulb of an Expansion Valve is the part that opens and closes the seat and needle in response to the temperature in the coil.

Capacity information on both types of Expansion Valves is very often misunderstood. To provide sensitivity

of operation, capacities are compiled on a 3 to 4° superheat change. This means that when a needle lifts from the orifice a distance caused by the pounds pressure created due to a 3 to 4° superheat change, enough refrigerant will flow through to provide a definite amount of B.t.u.'s.

This does not indicate that the distance traveled by the needle during that change represents its maximum opening. The maximum needle opening is considerably in excess of a valve's rated capacity, consequently considerable more capacity can be obtained through the same valve if necessary during emergency repairs. Therefore, if a 3/32" orifice valve becomes inoperative and the service engineer has only a 1/4" valve—install it. Again refrigeration can be continued. Frequently Expansion Valves installed are considerably oversized and a smaller orifice will give even better performance.

If it so happens that a 3/32" orifice valve needs to be changed and you have a 1/32" orifice valve only, again put it on. A surging condition may result but that is preferable to no refrigeration at all, and very often will not even be detected.

It isn't generally known, but a Thermostatic Valve for "Freon-12" can be used on a Methyl system and vice versa. Changes in Expansion Valve adjustment are necessary in both instances. A data sheet instructing you on the number of turns required has been prepared and will be given you upon request after the

meeting.

In the event refrigerant control trouble is encountered and an Expansion Valve of any type cannot be readily obtained, a hand-valve can be installed. Of course, the customer must be instructed to crack it and close it alternately and he may lose some sleep that night, but anything to continue refrigeration until a suitable part can be brought back to the job.

The last alternative is to connect the low side directly to the liquid line and pinch the tubing until just enough refrigerant goes through to provide refrigeration. If you have any extra tubing attach enough to the end of the coil to provide a dryer coil, thereby dissipating any flood-over before it reaches the compressor.

### Controls

Emergency repairs in connection with Controls don't seem to be such a complicated procedure; probably because they are better understood and all mystery in connection with their operation has been eliminated. Nevertheless, like Expansion Valves, two types—pressure and temperature—are generally used and each is interchangeable. However, some controls do not require complete replacement because of inoperation. Practically any defective parts can be replaced with ease and in a great many cases without even disturbing the original adjustment.

In the event of control failure and a replacing part or another instrument is not available, a manually operated switch can always be installed and refrigeration of sorts continued.

### Solenoids

Solenoids on a large number of installations are used to provide better refrigeration hook-ups, but are not always essential to obtain refrigeration. Inoperation of Solenoids is mostly caused by burnt out coils or by an accumulation of dirt or some other foreign substance at the seat and needle. There is no remedy for a burnt out coil except a replacement; however, dirt can be removed by taking the valve apart in the field and cleaning the affected areas.

Many service engineers frequently by-pass inoperative Solenoids when a replacing instrument is not at hand.

In summary, may I caution you to accept the suggestions as submitted in connection with emergency repairs only, particularly with reference to Expansion Valves. The advancements made in the art of Expansion Valve manufacture have come about because of necessity and are based upon many years of experience. The refinements of your profession go hand in hand with these advancements and others made in the refrigeration industry. Therefore, let us continue going forward when materials are free again—after we have won this war.

## TEMPRITE Oilrite AUTOMATIC OIL SEPARATOR

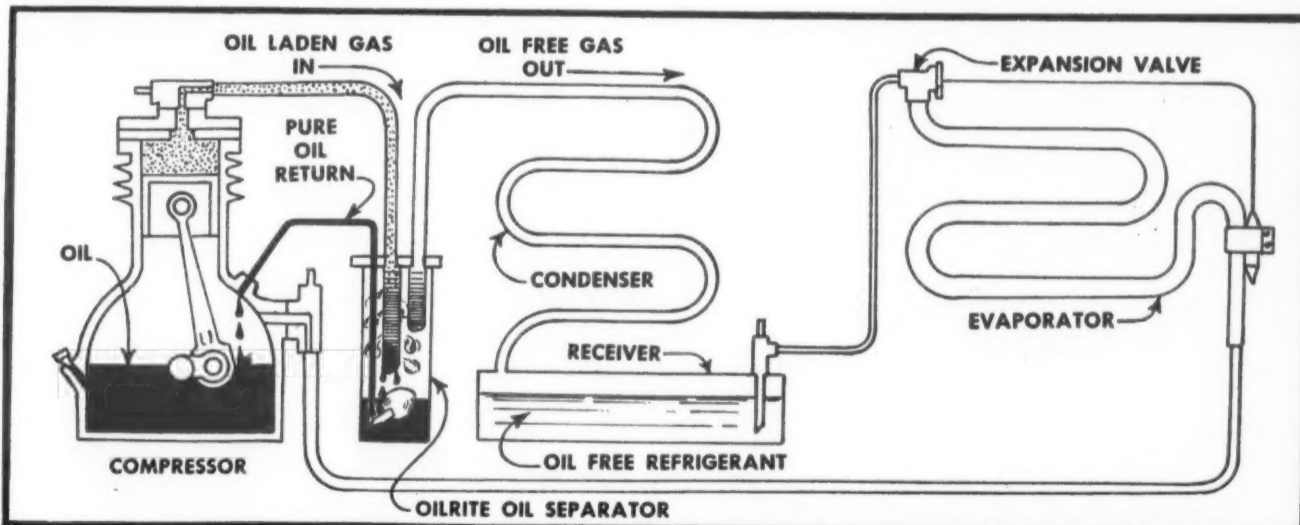
### IMPROVES ALL REFRIGERATING SYSTEMS



Temprite has proven to the refrigerating industry that oil can be kept out of the low side evaporator coils with the use of their improved "Oilrite" Separators. This steps up the efficiency of all types of refrigeration lowside by allowing the refrigerant to evaporate at its true boiling point and also eliminates the oil as a heat transfer insulator from the inside surface of the refrigerating lowside. In many LOW TEMPERATURE installations it is impossible to reach the desired temperatures during the peak season because of oil mixing with the refrigerant. The installation of an "Oilrite" quickly overcomes this difficulty and often results in 4 to 8 degrees lower temperatures in the evaporators without an increase in operating time.

### ★ FEATURES ★

1. Increases system capacity as much as 20%.
2. Reduces low temperature evaporators 4 to 8 degrees without increased operating time.
3. Permits refrigerant to evaporate at true boiling point.
4. Prevents dirt, scale and carbon entrained in oil from reaching and plugging strainers and valves—improved valve operation.
5. Provides constant oil level in compressor, eliminating worn seals, scored cylinders and bearings—adds years of efficiency to both old and new equipment.



### HERE'S HOW IT WORKS

Diagram above illustrates a refrigerating system showing the installation of an "Oilrite" oil separator. Note how the "Oilrite" permits all vital parts of the compressor to be lubricated and only starts to function when the oil leaves the compressor.

The "Oilrite" separates and collects the oil immediately

after the oil has left the compressor and passes the pure separated oil back into the crank case of the compressor, thus allowing only pure, oil-free refrigerant gas to enter the condenser and receiver.

DEALERS: It will pay you to investigate this improved "Oilrite" automatic oil separator. Send today for Bulletin No. R-5A describing this unit in detail. Prices will be sent upon request.

## TEMPRITE PRODUCTS CORP.

Originators of Instantaneous



Liquid Cooling Devices

43 PIQUETTE AVENUE

DETROIT, MICHIGAN

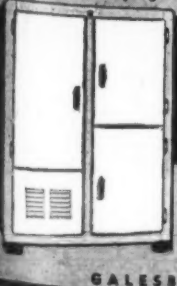
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For 1943 — most complete range of styles and  
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New modern styling — priced for real values.



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CABINETS**  
**Midwest**  
Mfg. Company  
GALESBURG, ILLINOIS

# Industry Committee Reports On Essentiality of Water Coolers

Use For Promoting Industrial Health Is Stressed;  
Armed Forces Took 74% of Output In 1942

WASHINGTON, D. C.—The 1943 production requirements for self-contained mechanical drinking water coolers can be substantially reduced with resultant savings in steel, copper and manpower, if water coolers of this type are installed for essential use only. This conclusion summarizes recommendations on essentiality made in a Task Committee report presented to the Water Cooler Industry Advisory Committee at a recent Washington meeting.

The report lists five categories in which the use of mechanical drinking water coolers is considered essential and recommends prohibition of the use of these water coolers in one category. A change in the optimum temperature for cooled water from the customary 45-50° to a maximum of 55° is also recommended.

The use of mechanical, self-contained water coolers is held to be essential in (1) industrial plants and other establishments producing military or essential civilian supplies or services; (2) military and civilian hospitals; (3) military camps, bases, airfields, etc.; (4) foreign bases and for Lend-Lease export; (5) military and essential civilian activities in tropical climates.

Cooled drinking water in office buildings (both private and government), schools, and commercial establishments is considered desirable, but not essential, to the war effort. The Task Committee report therefore recommends that the use of mechanical self-contained water coolers be prohibited in such places for the duration, except by special permission of the War Production Board.

The need for cooled water and the practicality of installing mechanical coolers in each of the essential categories is pointed out in the report. In industrial plants, cooled water is held to be necessary to maintain efficiency and morale and to protect health. Installations should be available to replace worn out equipment, for expansion of existing plants and personnel, and for new construction. Military hospitals, both newly constructed and converted, can be equipped with cooled water with the minimum use of critical materials, the report states, by the installation of self-contained mechanical coolers. Requirements for civilian hospitals will probably be comparatively small, since few new civilian hospitals will be built for the duration.

Cooled water is held to be essential in military camps situated where the summers are hot, and such camps should be equipped throughout with mechanical water coolers; in other camps, such coolers should be installed in mess quarters and recreation centers as a health measure and to reduce the consumption of coffee, tea, and bottled beverages.

Production figures based on information obtained from the Water Cooler Manufacturers Trade Assn. and other reliable sources are included in the report. Estimated end uses of 1942 shipments of coolers of all types are: Army, 32%; Navy, 42%; Defense Plants, 16%; Lend-Lease, 5%; all others, 5%.

A separate report, submitted by C. M. Cordley, member of the Task Committee, pointed out that ice-refrigerated coolers must be used instead of mechanical self-contained ones under certain circumstances, as for example, where suitable electrical connections are not available, and in temporary structures not justifying the expense of installing mechanical units. Iced coolers of the inverted bottle type are obviously necessary where piped water is inaccessible or cannot be used for drinking purposes.

## Report Made By Task Committee

Your Task Committee, as appointed by Mr. Sterling F. Smith, of the War Production Board, by his letter of Jan. 16, 1943, was requested to study and report on the essentiality of self-contained mechanical drinking water coolers.

The Committee was further asked to make specific recommendations on the following (as quoted from Mr. Smith's letter):

1. "When and where, if at all, is it essential that such water coolers should be made available in industrial plants, hospitals, or other establishments, and why is this essential in each case?"

2. "From information already in your possession, what would you consider reasonable estimates of:

(a) The number of such coolers considered essential for installation during 1943, determined in accordance with your recommendation under (1) above?

(b) The quantities of copper and steel or other critical materials, which are already fabricated to the extent that any use, other than for the manufacture of such coolers, would be impractical."

3. "What standards would be appropriate in determining whether such coolers are necessary in a particular case, with respect to such factors as the number of employees which can be supplied per cooler, the maximum water temperature consistent with health, etc."

## ESSENTIALITY

Your Committee has considered at all times that the primary object of the curtailment of water cooler production is for the conservation of critical materials. It believes that not only are copper and steel critical materials, but in addition, that manpower is one of our most critical materials. Manpower is our source of war materials, and fighting energy. It is important that we maintain this manpower at a high level of productive efficiency. Drinking water is the most essential food. And food is necessary to insure the maximum efficiency and to protect the health of our working and fighting forces.

In order to establish the need for palatable drinking water for efficiency and health; we have prepared the accompanying brochure, "Water Coolers at War." This brochure gives the reports and recommendations of many authorities, all of which are outside the water cooler industry.

Included among these authorities are State and Federal Health Department heads, prominent State and Federal Labor Officials and others interested in the broad subject of the health and productive efficiency of workers. You will note that there is a unanimity of opinion for the need of properly cooled drinking water.

## QUESTION NO. 1

"When and where, if at all, is it essential that such water coolers should be made available in industrial plants, hospitals, or other establishments, and why is this essential in each case?"

## INDUSTRIAL PLANTS

The requirements for water coolers for industrial plants and other establishments

producing military or essential civilian supplies or services are: The maintenance of worker efficiency, worker morale, protection of health, requirements of the Walsh-Healy Public Contract Act, and the all important fact that the worker is not or should not be a transient, as in an Army camp. Further, he is accustomed to cooled drinks during his time outside the plant and inevitably his effort will be adversely affected if cooled drinking water is not available in the plant.

Water coolers should therefore be made available—

1. For necessary replacement of worn-out equipment.
2. For expansion of existing plants or personnel.
3. For new plant construction.

## HOSPITALS

For civilian hospitals your Committee does not believe that the need will be very great for the duration, as there is little likelihood of such new construction in this field. There may, however, be some requirements for water coolers for existing hospitals, and such coolers should be available.

For military hospitals where conversion of existing buildings or the construction of new buildings is involved, there will be a need for properly cooled drinking water. In such cases this drinking water can be provided with the minimum use of critical materials by installing self-contained mechanical drinking water coolers.

We, therefore, recommend that electric drinking water coolers be made available for military hospitals and as may be required in connection with existing civilian hospitals.

## ARMY & NAVY CAMPS, BASES, AIRFIELDS, ETC.

The personnel in these locations is constantly changing. The men are training and are to be sent over the world to many places where cooled drinking water will not be available. Copious supply of cooled drinking water, therefore, probably is not as essential as in industrial plants.

It is our belief, however, that it should be available for mess quarters and recreation centers for physiological reasons and to conserve, with respect to consumption of coffee, tea, and bottled beverages. It is also recommended that cooled water supply be made generally available throughout the camps, in geographical locations where higher temperatures prevail during the summer months.

## LEND-LEASE AND FOREIGN BASES

We recommend that electric drinking water coolers be permitted for export shipment for Lend-Lease, for foreign military bases and for applications in the tropics where it is impossible to obtain properly cooled drinking water for essential civilian and military uses.

## OFFICE BUILDINGS, COMMERCIAL ESTABLISHMENTS, SCHOOLS, AND OTHER CIVILIAN APPLICATIONS

Although it is recognized that it would be desirable to have properly cooled drinking water available in civilian establishments, we do not believe that it is as essential to the

(Concluded on Page 9, Column 1)

## BUILDING FOR TOMORROW— TODAY

That's what America is doing—building for tomorrow so that when the boys come back from "over there" they will know that the folks at home have been in it too.

Today, we at White-Rodgers are devoting our time and efforts to develop, design and produce controls for our Military and Naval Air Forces.

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**Methyl Chloride—Sulphur Dioxide**  
Agents for Kinetic's "Freon-12"

WHATEVER YOUR NEEDS, LET THE FRIENDLY ANSUL JOBBER NEAR YOU SERVE

## Minimum Standards for Workers Given in Recommendations

(Concluded from Page 8, Column 5) war effort as certain other applications. Your Committee, therefore, recommends that for the duration, electric drinking water coolers be prohibited for such uses except by specific permission from the War Production Board. We would also recommend that all government office structures and the like be included in this category.

### QUESTION NO. 2

"From information already in your possession, what would you consider reasonable estimates of:

(a) The number of such coolers considered essential for installation during 1943, determined in accordance with your recommendation under (1) above?

(b) The quantities of copper and steel or other critical materials, which are already fabricated to the extent that any use, other than for the manufacture of such coolers, would be impractical?"

As directed in Mr. Smith's letter of Jan. 16, we have not contacted the industry, by questionnaire, concerning any statistical information on this subject which might be considered of a confidential nature. However, the Water Cooler Manufacturers Trade Association has made available certain statistical information bearing on the above questions. Attached is a summary of manufacturers' statistics obtained from the Trade Association and other reliable sources. It indicates the number of coolers considered essential for the foregoing applications during 1943. It also shows the quantity of fabricated and semi-fabricated materials in the industry for land water coolers and which are unsuited for any other use. These statistics also indicate the amount of material that would be required to balance out certain unmatched quantities of water cooler parts as needed to produce complete coolers.

From the foregoing information it is evident that this industry has very

small inventories of completed coolers available in their distributor and factory stocks. It further indicates that the orders now being accepted are of a highly selective nature, as indicated by the end use and high priority ratings. By limiting the production of electric water coolers to the vital requirements as herein recommended, the estimated requirements for 1943 show a substantial reduction from the production of 1942.

### QUESTION NO. 3

"What standards would be appropriate in determining whether such coolers are necessary in a particular case, with respect to such factors as the number of employees which can be supplied per cooler, the maximum water temperature consistent with health, etc.?"

Your Committee, after careful study and in consideration of present emergency conditions, is willing to recommend that usual peace time optimum temperatures of 45°-50° F. for cooled drinking water be suspended for the duration and that of not more than 55° F. be considered satisfactory.

Water coolers should be provided on each floor level on which workers are employed and so spaced that a worker need not travel more than 100 feet to reach a cooler.

Experience over many years indicates that workers in various classifications, when served by self-contained drinking water coolers, normally require water coolers having capacity as follows:

#### Type of Application

Light physical work.
Hot heavy physical work.
Hospitals.
With food service.
Number of Persons Served Per Gallon of Water Cooled Per Hour
7 (bubbler service*)
5 (bubbler service*)

4 (bubbler service\*)

12

12

(\*With bubbler service, an average of 40% of the water cooled is consumed, with the balance of the water used for precooling.)

The foregoing information is based upon normal peace time conditions—under present demands for high production from workers these requirements may be exceeded.

### SUMMARY

To sum up the foregoing, your Committee recommends:

(A) That mechanical self-contained drinking water coolers be available:

1. For industrial plants and other establishments producing military or essential civilian supplies or services.

2. For applications in military hospitals.

3. For applications in civilian hospitals.

4. For applications in mess halls and recreation centers of military establishments.

5. For applications in the military establishments in locations where higher temperatures prevail during the summer months.

6. For Lend-Lease and foreign bases.

7. For essential civilian and military use in tropical climates.

(B) That the coolers be applied according to the recommendations as given under Question No. 3 above.

(C) Your Committee believes that adherence to the foregoing recommendations will be beneficial to the war effort and will eliminate the need for makeshift, insanitary or less efficient means for providing cooled drinking water.

### Silverstone To Produce Walk-In Refrigerators

OAKLAND, Calif.—Nat Silverstone, distributor for Super-Cold Corp. commercial refrigeration equipment, recently began here construction of walk-in coolers. To obtain increased working space he has leased a building at 2119 W. 25th St.

Mr. Silverstone reports that 98% of his present business is being done through prime and sub-contracts for the Army and Navy.

## Interpretation Given on Price Order 136 Where Sale is Made Pursuant to Rental

WASHINGTON, D. C.—An official interpretation has been issued with reference to price determination in the case of a sale pursuant to rental contract, under Maximum Price Regulation 136—Machines and Parts, and Machinery Services (which covers some sizes of commercial refrigeration machines).

States the interpretation:

"While the sale of a machine pursuant to a rental contract entered into prior to July 22, 1942, is specifically excluded from the Regulation, Section 1390.2 (j), the rental of such a machine is subject to Regulation No. 136.

"Sales pursuant to a rental contract entered into on or after July 22, 1942, are subject to Regulation No. 136, and the condition of the machine at the time the contract is entered into, i.e. new, rebuilt and guaranteed, or other second-hand condition, determines the applicable maximum price.

"The 'valuation' agreed upon at the time the rental contract is entered into may not exceed the maximum price applicable to the machine. Carrying charges to reimburse the lessor for financing, insurance, and other expenses applicable to the renting of the machine are not part of the purchase price when transfer of title takes place, but rather are part of the rent paid for the machine.

"Hence, under a contract containing a recapture clause, where the opinion to purchase is exercised prior to the time the total rental payments over and above the carrying charges equal the valuation of the machine, the carrying charge may be deducted from the rental payments before the purchase price is computed. The payment made upon exercise of the option, plus the rental payments already made, less the carrying charge payments already made, may not exceed the maximum price under the Regulation."

## York and Tenney Engineering Co. Will Collaborate on Stratosphere Test Chamber

NEW YORK CITY—Stratosphere testing cabinets capable of reproducing a temperature range from 100° below zero to 158° above zero are now being produced jointly by the York Ice Machinery Corp. and the Tenney Engineering Co. through a new plan of collaboration of their respective engineering and factory staffs.

The collaboration plan, according to officials of the two companies, is designed to "make more widely available the most advanced facilities for stratosphere and temperature testing of flying and communications equipment and instruments." Under the new plan, stratosphere testing cabinets engineered by the Tenney Engineering Co. will be equipped with specially designed refrigerating equipment built by York, the statement said.

The new York-Tenney strato-testing systems are designed to reproduce temperature, humidity and atmospheric pressure conditions encountered from sea level to 50,000 feet above sea level, the approximate level of present-day stratosphere flying. Temperature system models are also available with the same temperature range but without the atmospheric pressure control.

The testing cabinets use the York two-stage Cascade refrigeration system and are equipped with automatic control panels. Specially constructed observation ports are sealed to prevent any condensation. To make mechanical adjustment of the apparatus under test, small rotating shafts are installed. These are manually turned from the outside with the shaft extending through a specially designed pressure seal.



## Want to help a Lady in Distress ?

"WHY CAN'T I EVER FIX THINGS?"

Don't forget, lady, your electric appliances are precision-built for long life and maximum service. They were put together by experts and they must be repaired by experts. That's why it is wiser and more economical to call on a skilled specialist at once.

The General Electric Appliance Service man has the "Know-how," the necessary replacement parts and the proper tools. In addition, he can give you a lot of good advice on the proper use and care of your appliances.

You'll soon be seeing this illustration and text as one of a series of General Electric Consumers Institute advertisements appearing in National Women's Service magazines. It's part of the story, your story, G-E is telling to Mrs. America.

### HERE'S HOW WE'LL HELP YOU HELP HER



#### G-E SERVICE SCHOOLS

Attendance in early 1943 schools topped all previous records! Features include new full-color movie, sound slide films, demonstrations with practical repair and maintenance instruction. Ask your G-E Distributor for complete details on next sessions, or write to the Product Service Section, General Electric Company, Bridgeport, Conn.

#### SERVICE STORE DISPLAY

Made in two parts (you can detach the Appliance Service Center Dealer Section and use separately if you wish). It's a big display—4 ft. high and over 2 ft. wide. For floor and window use. Puts the spotlight on your store as Appliance Service Headquarters—Price only \$1.15 each, postpaid. Order yours from your G-E Distributor or write for information to Advertising Division, General Electric, Bridgeport, Conn.

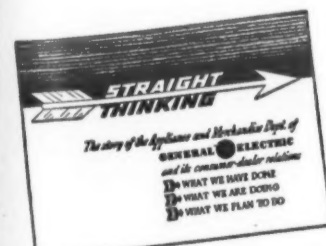
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Ask any successful Appliance Serviceman this question: "What is most helpful to you in your business?" Invariably his answer is: "THE PRODUCT MAN." For over 14 years this publication (issued monthly by G-E's Appliance and Merchandise Department) has been the direct link between the factory and the field servicemen.

Each issue contains 25 to 30 pages of "work-facts" and "know-how" on servicing G-E Appliances. Only \$1.50 a year. If you're not a subscriber, get on the list today, through your G-E Distributor. Ask him, too, about yearly volumes bound in heavy covers for only \$2.00 per copy.

#### NEW "KNOW-HOW" HANDBOOK

Here's practically a new, just-off-the-press service manual that tells all you ever need to know about servicing the famous DR type General Electric sealed refrigerating units. You'll find this new DR Manual ideal for instructing new service personnel, and a fast refresher course for veterans. Get your copy through your Distributor.



### ASK TO SEE "STRAIGHT THINKING"

The story of G-E's wartime program planned to help you. Includes a lot of darned interesting ideas—for instance, the complete set-up of this year's new advertising campaigns that have been planned for 1943 needs. Get your G-E Distributor to show you a copy of "Straight Thinking." It'll help.

### LOOK FOR THESE G-E CONSUMERS INSTITUTE ADS IN THESE MAGAZINES WHICH APPEAR ON NEWSSTANDS IN APRIL

These G-E Consumers Institute Advertisements are but a part of the company-wide General Electric advertising schedule.

Saturday Evening Post	April 10
Collier's	April 10
Look	April 6
New York Times Magazine	April 18
American Home	May
Ladies Home Journal	May
House Beautiful	May
Good Housekeeping	May
Holland's	May
Country Gentleman	May

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### Refrigeration Will Help Win the War

## Nelson Recognizes Nation's Need For Refrigeration

DONALD NELSON recently told reporters at a press conference that production of some civilian goods might be resumed soon, and particularly mentioned refrigerators.

Growing scarcity of foodstuffs, according to the WPB Chairman, makes home refrigeration more important than ever before.

Ice boxes and kerosene-operated absorption-type refrigerators are the only home refrigerators now in production. So far no move has been made to permit the resumption of "mechanical" refrigerators. Even if such an order were initiated, it would be difficult for most former manufacturers of these products to retool and rearrange their plants without considerable delay.

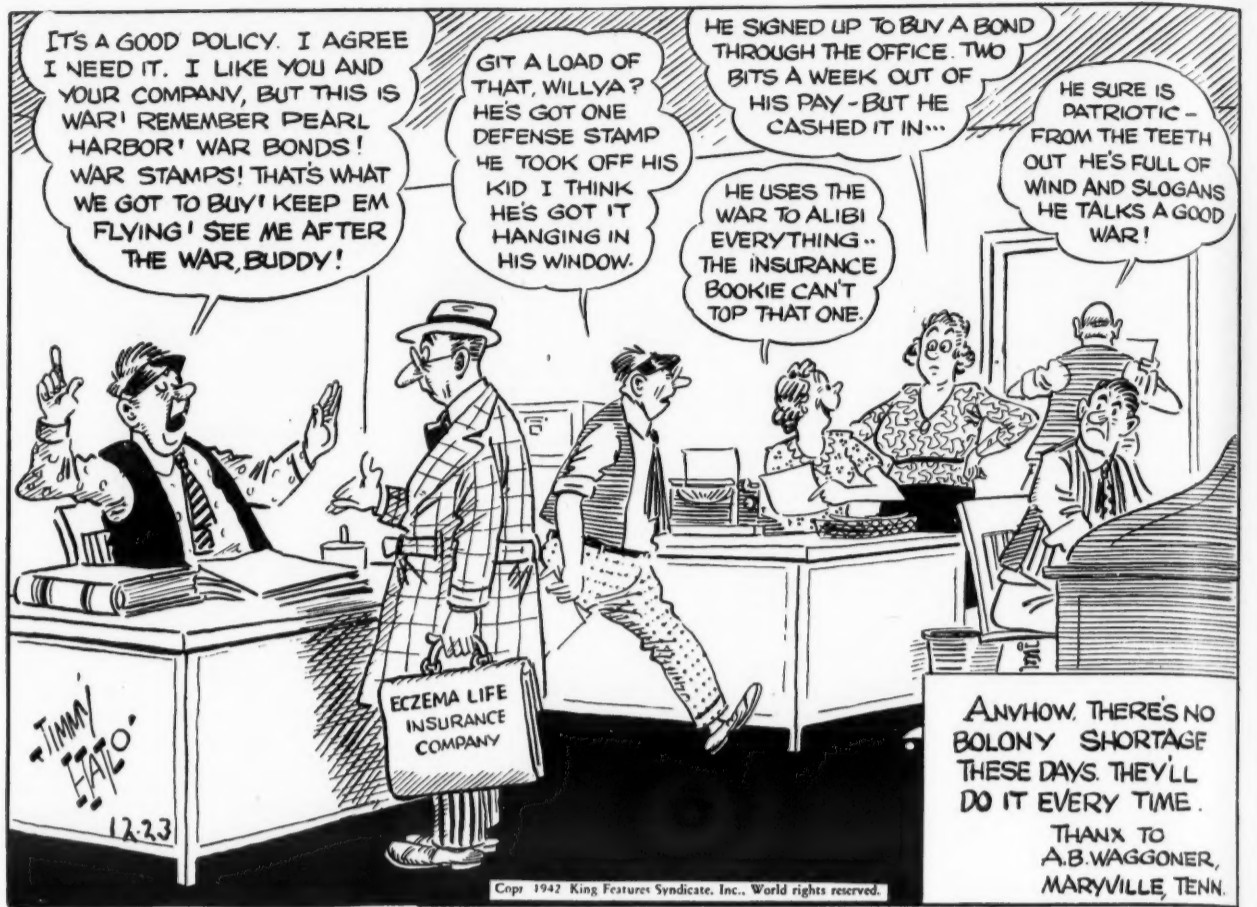
As the NEWS pointed out in a recent editorial, "Two Post War Periods," the cutting back of scheduled ordnance production (which has already begun) may be sharp after Hitler capitulates. This will throw both plants and labor out of work, and should make the resumption of home appliance production very desirable indeed.

Whether or not Mr. Nelson believes that the planned production of half a million ice boxes in 1943 is sufficient remains to be seen. It is certain that he will take into consideration the facts that ice must be delivered, thus using scarce tires, gasoline, and manpower.

If the need for a million or so more household refrigerators this year is recognized, plans should be made at once for renewed production of mechanical refrigerators.

It is gratifying indeed that Mr.

They'll Do  
It Every  
Time  
By  
Jimmy  
Hatlo



Nelson recognizes the importance of household refrigeration. The whole country will be sharply aware of it before the summer is over.

## Compressors, Valves & Heat Exchangers

JUST how important the products of the refrigeration industry are to the war effort has been demonstrated dramatically by the recent conflict between the synthetic rubber program, the 100-octane gasoline program, and the escort vessels program.

All three critically needed items are competing for three scarce "bottleneck" items, it was revealed. These three items are:

- Compressors
- Valves
- Heat Exchangers.

As all subscribers will know, these three products are principal components of a refrigeration system. Manufacturers in this industry are providing them for synthetic rubber, hi-octane gas, and the Navy.

That there would be a shortage of these items has long been predicted here, and we have repeatedly said that conversion of the facilities for making these items to the production of ordnance would turn out to be a mistake.

It was a mistake, and one that is being rectified.

The industry should be proud of its contribution in terms of steadily increasing production of these products, and should get all the assistance possible—in terms of labor, materials, and scheduling help—to enable it to meet the pressing demands now being made on it by competing production programs.

## Here's Where We Come In

AMERICA is approaching the upper limits of its supply of materials, labor, and facilities for producing war materiel. We are bumping our heads already against the supply ceilings of many materials, and soon will be on labor. Practically no new factories will be built from now on.

From here on in, if we are to in-

crease our war production rates, it will have to be done through ingenuity, through more effective utilization of labor and materials.

And that's the point where this industry comes in to help. In general, war production applications of refrigeration serve to

- (1) Save man-hours
- (2) Save materials
- (3) Prevent rejects
- (4) Reduce scrap loss
- (5) Speed flow of materials
- (6) Conserve and lengthens machine tool time
- (7) Save time on materials handling.

Every one of these things will help Uncle Sam get more out of his supply of labor and materials—the limits to which he is approaching for the first time in his history.

So refrigeration engineers should be more in demand than ever during the coming months. It's difficult to conceive of a war plant which will not have some problem which a new refrigeration application can solve. Chances are that the plant manager may not know about some of these new industrial refrigeration uses, so it's up to us to tell them about recent developments of the art.

It is our patriotic duty as refrigeration experts to seek every opportunity to apply refrigeration technique to upping war production in the plants in our respective communities.

## LETTERS

### HARTFORD BANK HAS PLACE IN 'LAYAWAY' BUYING PLAN

The Hartford Electric Light Co.  
266 Pearl St., Hartford, Conn.

Editor:

We were interested in reading your description of our plan for post-war delivery of appliances in your issue of Feb. 15. The article covered our plan very well.

You did, however, omit a reference to the Hartford National Bank & Trust Co. which is a major contributor in the plan. Under the Victory Sales Plan the monthly payments by the customers are made to the Hartford National Bank & Trust Co. The bank keeps records and holds the money in trust. The bank is taking care of this business through its time payment department and as a matter of fact the entire plan has been worked out to follow as closely as possible the normal channels of business.

The reason that we are writing you on this point is that we feel that our plan does not disturb the normal course of business and is simply patterned on methods and plans with which all of us are familiar.

R. A. Gibson, Assistant  
to the Vice President

### BULLETIN 42 GIVES DATA ON REPAIRMEN DEFERMENT

The Schodder Mfg. Co.  
Wheeling, W. Va.

Editor:

Could you give us any information on any late rulings by the Selective Service Board regarding deferment of commercial refrigerator service men?

C. R. Schodder

Answer: A news story in the Feb. 18 issue of AIR CONDITIONING & REFRIGERATION NEWS reported that in Bulletin No. 42 the War Manpower Commission notified all Selective Service Board that repair and hand trade services, including refrigerator repair, are considered essential to the war effort.

### REFERENCE TO L-154 IN ERROR

Puro Filter Corp. of America  
440 Lafayette St.  
New York City

Editor:

In your bulletin edition of March 8, on page 2, you state that self-contained drinking water coolers are released from the restrictions of M-9-c order, since restrictions are imposed in Limitation Order L-154 governing water coolers.

We do not find that Limitation Order L-154 applies in this case and are wondering whether this is not a typographical error, and that you meant to refer to L-126.

A. Galston, Vice President

Cordley & Hayes  
443 Fourth Ave.  
New York City

Editor:

In your March 8 issue news article regarding M-9-c changes, you refer to Limitation Order L-154 governing water coolers.

As far as we know the industry has never applied L-154 to water coolers—Limitation Order L-126 released water coolers from the restrictions of M-9-c.

W. J. Mafera, Ass't to President

Answer: It was a typographical error. The order referred to was L-126.

### FULL OF INFORMATION

150 Frame Ave., Waukesha, Wis.

Sirs:

Find enclosed two dollars in cash for the following two "Refrigeration Library Books": Manual No. 4; Manual No. S-1.

I find your books very interesting and full of very useful and valuable information.

Yours truly,

Robert S. Granger

### 'MOST VALUED'—

P.O. Box 1275  
Ancon, Canal Zone

Sirs:

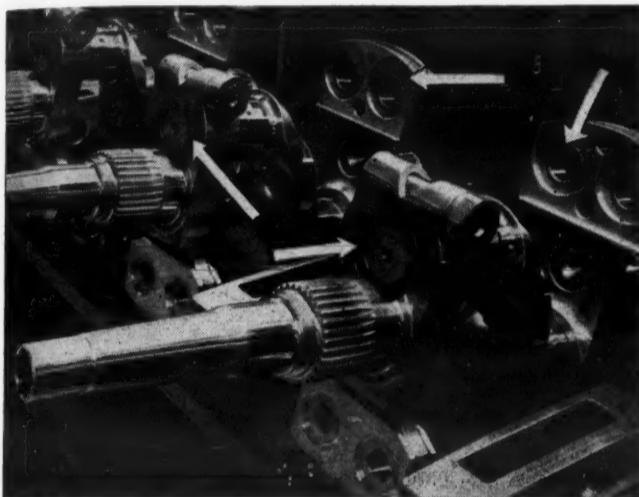
Effective immediately please forward my subscription to your most valued paper "the News"; and believe you me that "most" is underrated. In these times more than ever your paper is important.

Frank Dacosta

# How 'Cold' Is Used In Metal Treatment Work

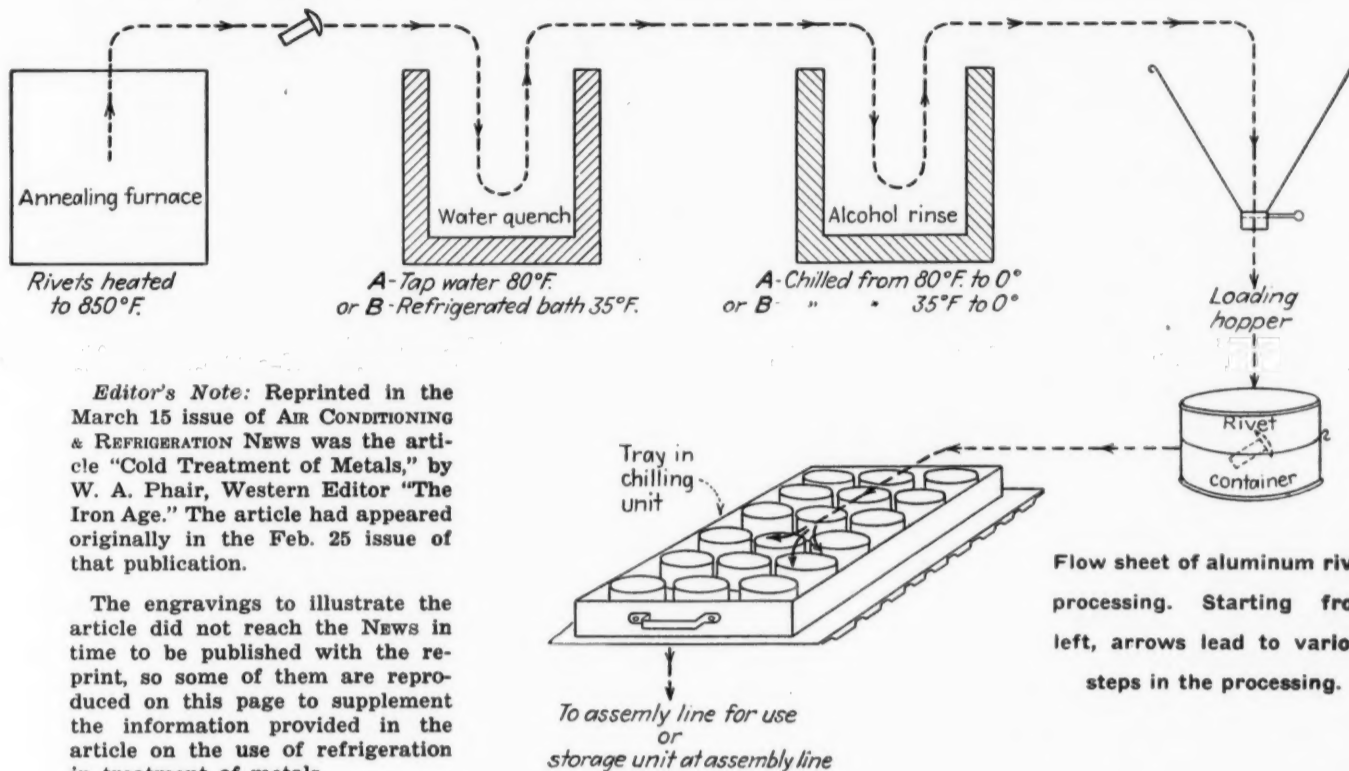


A 2 inch machine tool shaft being placed in a portable chilling cabinet which will shrink it about 0.001 inch in 40 minutes at  $-50^{\circ}\text{F}$ . to permit fitting a bearing on it.



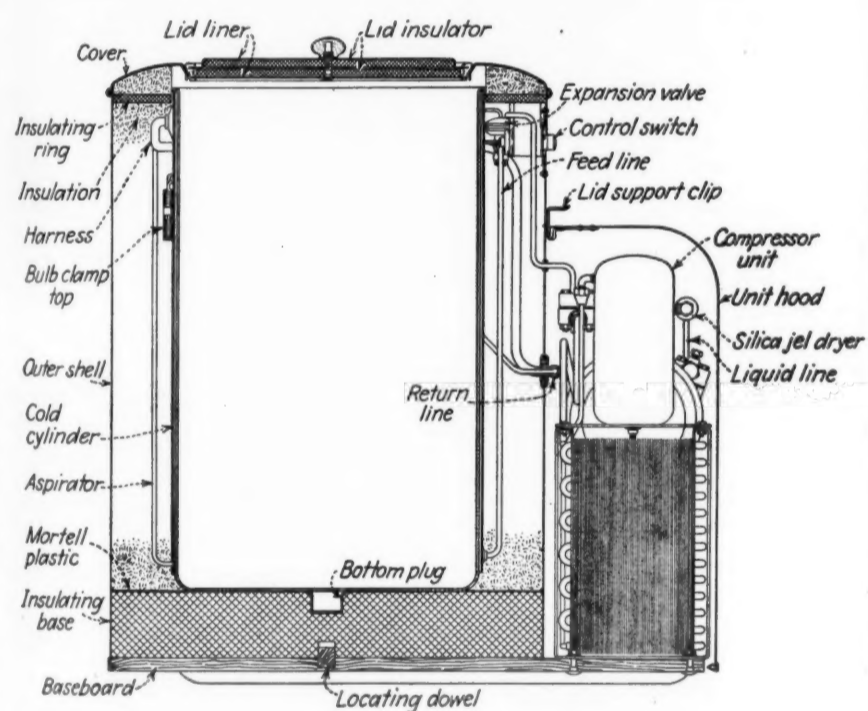
Dowel pins, sprine pins, counter-weight bushings, and center section end plugs are fitted into these aircraft engine crankshafts by chilling. Arrows point to some of these parts.

## Where Refrigeration Fits Into The Picture of Aluminum Rivet Processing



*Editor's Note:* Reprinted in the March 15 issue of AIR CONDITIONING & REFRIGERATION NEWS was the article "Cold Treatment of Metals," by W. A. Phair, Western Editor "The Iron Age." The article had appeared originally in the Feb. 25 issue of that publication.

The engravings to illustrate the article did not reach the News in time to be published with the reprint, so some of them are reproduced on this page to supplement the information provided in the article on the use of refrigeration in treatment of metals.



Cutaway sketch showing construction of a Deepfreeze unit which will give temperatures down to  $-50^{\circ}\text{F}$ . for industrial use.



Aluminum rivet holding unit at a Ford aircraft plant. Note doors operated by foot pedals.



## If the War Ends Tonight . . .

. . . tomorrow American industry will be busy building an infinite number of strange new products born in the war. The peacetime applications of these new devices will make your life easier in scores of ways. And Weatherhead will help build them just as we've helped build cars, refrigerators and airplanes in the past.

Look Ahead with



# Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO  
Manufacturers of vital parts for the automotive, aviation,  
refrigeration and other key industries.

Branch Offices: Detroit, Los Angeles, New York and St. Louis

## The Priorities Quiz

(AIR CONDITIONING & REFRIGERATION NEWS, with the aid of a man who is actually engaged in handling much priorities work, will attempt to answer questions from readers about priorities problems. The editors will not guarantee to answer all questions, nor can they guarantee that the answers will be legally perfect, but an effort will be made to provide a guide to correct procedure wherever possible.)

### If Controlled Materials Are Not Employed

Q. We do not use any controlled materials in our manufacturing operations. Will CMP affect us in any way or are we outside of the effect of CMP regulations entirely?

A. You will still be affected by CMP Regulation No. 5 which covers maintenance, repair, and operating supplies, if in the purchase of such material, you require anything made of a controlled material—copper, steel, or aluminum. As it is quite likely that you do use metallic materials as maintenance, repair, and operating supplies, you should familiarize yourself with CMP Regulation No. 5 for deliveries of these requirements will be made after March 31 only in accordance with provisions of that CMP regulation.

### If Priorities Become Necessary For Paper

Q. We notice that CMP Regulation No. 5 does not permit us to extend preference ratings for the purchase of stationery, printed matter, and other

paper products and when we attempt to purchase cardboard boxes, etc., our suppliers always request us to extend a priority. Is it possible to furnish him a rating on this type of supply?

A. WPB contends that preference ratings are not needed for the purchase of stationery, office supplies and paper products of the type you mention. However, it is true that suppliers are asking for preference ratings on orders for such material. If your supplier insists that he cannot furnish you these items without a preference rating, it is suggested that you file an application with the WPB on Form PD-1A setting forth very plainly the reasons why you cannot secure this material without a priority—giving the name of your supplier, and the preference rating that he has requested.

Don't forget to file your PD-1A application with your Regional or Local WPB and after April 15, be sure to use the new revised PD-1A form.

### Extending Priorities By Phone or Telegram

B. I understand the procedure with

respect to extending priority by telephone and telegram has been changed. Can you give us the gist of this amendment?

A. This is covered by a recent amendment to Priorities Regulation No. 3. Formerly, you were required to include in your telegram orders a 10-word certification. This has now been replaced with just two words "Ratings Certified." This statement in your wire will permit your suppliers to extend the preference rating you indicate without further confirmation.

When telephoning an order, your supplier is privileged to accept your statement by phone provided within 15 days you send a written confirmation of the material you have purchased and the preference rating you assigned. Your supplier, however, cannot extend this rating you have given by telephone to replace his inventory until he has received this written confirmation. Before this section of Regulation No. 3 was amended, your supplier previously was prohibited from making any further deliveries to you until you had confirmed this telephone order in writing. This has been modified and he is no longer so prohibited.

### Supplies For Foundry Operated By Producer

Q. We operate a foundry in conjunction with our manufacturing business. I have gone through Controlled Materials Plan regulations carefully but have not found anything to indicate how we are to get raw material for the foundry under the Controlled Materials Plan. Do

you have any information on this?

A. Foundries are considered controlled materials producers and, for the time being, will produce raw materials by direct allocation through the respective controlled materials branches. However, the Controlled Materials Plan group will clear up this question, which has been asked a great deal when CMP Regulation No. 8 is issued shortly. This regulation will cover only production requirements and will explain how controlled material producers will secure raw materials.

For maintenance, repair, and operating supplies, controlled materials producers will follow the procedures under CMP Regulation No. 5. Meanwhile, you will continue to file your regular "PD" allocation forms with your controlled materials branch; for example, if you produce brass castings in your foundry, you will file Form PD-59 with the Copper Branch.

### Electrical Connections May Be Made Where Remodeling Is Made

WASHINGTON, D. C.—Electric, gas, and water connections may be made on premises, the construction or remodeling of which is authorized under Limitation Order L-41, in compliance with Supplementary Utilities Order U-1-d, notwithstanding the provisions of paragraph (h) of Utilities Order U-1, the Director of the Office of War Utilities announced March 8. Provisions to be met are that,

(a) For industrial or commercial consumers:

(1) The cost of material for such utility connections (including service drop or service pipe and any portion built by or for the consumer) is less than \$1,500 in the case of underground construction, or \$500 in the case of other construction.

(2) Connections can be made with an expenditure of not more than 60 pounds of copper in conductor for electric service, 250 pounds of iron or steel pipe for gas service, or 250 pounds of iron or steel pipe for water service, and the producer has so certified in a letter addressed to the War Production Board and attached to the builder's application for L-41 approval.

(b) For domestic consumers:

(1) Specifications are the same as for industrial or commercial consumers (See (a) (1) above).

(2) The electric, gas, or water connections can be made within the limits established by the Housing Utility Standards, issued by the War Production Board, and the producer has so certified in a letter addressed to the WPB and attached to the builder's application for L-41 approval.

### Cordiner Takes One of WPB Key Positions

WASHINGTON, D. C.—Appointments to key positions on the WPB top staff were announced recently by Chairman Donald M. Nelson and Charles E. Wilson, Executive Vice Chairman. The appointments are preliminary to a regrouping of WPB staff functions which are now being worked out in detail.

Ralph J. Cordiner, who has been Director-General for War Production Scheduling, becomes a Vice Chairman of WPB and will serve as a special assignment to Mr. Wilson.

J. A. Krug, Director of the Office of War Utilities, is named Vice Chairman of WPB in charge of Materials Distribution. He also becomes chairman of the Requirements Committee and will continue to serve as War Utilities Director.

Donald D. Davis, recently Director of the Program Bureau, becomes WPB Vice Chairman for Operations. Curtis Calder, until today Director General for Operations, will be Executive Assistant to Mr. Wilson.

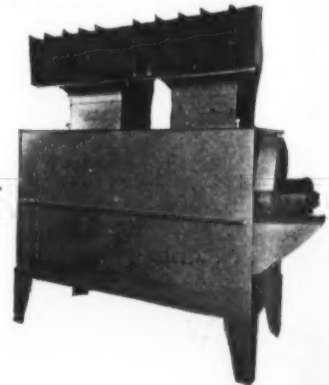


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FORCED  
CONVECTION  
UNITS**

DRY, WATER DEFROST  
CONTINUOUS BRINE SPRAY  
FINNED AND PLAIN  
SURFACE COOLING COILS

24 Years Service to the Industry—Catalog No. 32

**ACME INDUSTRIES  
JACKSON MICHIGAN**



## Radio Repair Concerns Get 'Crackdown' on Tube Sales Practices

WASHINGTON, D. C.—Any store or repair shop which refuses to sell tubes except to a customer who brings in his radio and pays a service charge is violating the General Maximum Price Regulation unless that practice was customary with the store or shop in March 1942, the Office of Price Administration warned March 22.

Instances have been brought to the attention of OPA where prospective buyers of radio tubes have been compelled to go to the expense and inconvenience of transporting radios to stores selling tubes, and of paying a service charge in addition to the cost of the tube, because the stores would not sell the tubes otherwise.

Where stores or repair shops did not require this in March 1942, the base period of the General Maximum Price Regulation which governs retail prices of radio tubes, the subsequent introduction of this service charge, and of the requirement that the customer bring the radio to the shop, is a violation of the regulation, OPA said.

### Flink Joins A.S.H.V.E. As Technical Secretary

NEW YORK CITY—Carl H. Flink has been appointed technical secretary of the American Society of Heating and Ventilating Engineers, President M. F. Blankin announces. His offices will be at Society headquarters, 51 Madison Ave., New York.

A licensed professional engineer for the state of New York, Mr. Flink will be responsible for the coordination of technical committee work and assist in the compilation of codes and standards. He comes to this position after 27 years in research and development work with American Radiator Co.; American Gas Products Corp.; and American Radiator and Standard Sanitary Corp.

### Dealers Cannot Make Use of Copper Scrap For Other Purposes

WASHINGTON, D. C.—Dealers who accept copper material as a scrap may not dispose of it in any other form, except with the specific permission of WPB, the Director General for Operations of WPB has ordered through revision of Supplementary Order M-9-b.

This action was taken because some scrap dealers have been purchasing copper scrap, and then disposing of primary shapes which happened to be mixed with the scrap. The amended order is designed to insure complete control of these operations.

### Below Zero Laboratory Sought For Swedish Army

STOCKHOLM, Sweden—A laboratory for the testing of war material under conditions of extreme cold, should be erected at the earliest opportunity, it has been suggested in a report submitted to the Swedish government by the Defense Supply Committee.

The cost would be 300,000 kronor (about \$75,000), and the laboratory should be in operation by the end of 1943. The testing of 22-ton tanks; their electrical and starting equipment, as well as the fuselages and instrument panels of airplanes would be carried on in the proposed laboratory.

Maintaining the coolant at precisely the proper temperature keeps machines at top efficiency 24 hours a day—7 days a week

**ACCURATELY  
CONTROLLED**

**Coolant  
Cooling**

**KEEPS MACHINES  
AT TOP EFFICIENCY**

### A NEW WAR PRODUCTION MACHINE TOOL FOR

- PORTABLE RIVET COOLERS
- CONDITIONING TOOL AND DIE ROOMS
- COOLANT COOLING ● OPTICAL EQUIPMENT MANUFACTURING ● HEAT TREATMENT ● COOLING ELECTRODES FOR SPOT WELDERS ● MANY OTHER OPERATIONS

**ACCURATE** control of coolant cooling is another important way in which refrigeration can increase war production with existing machinery.

To perform its function with the most effectiveness, refrigeration, of course, must be accurately controlled.

You can do this better with M-H Controls . . . Minneapolis-Honeywell Regulator Company, 2807 Fourth Avenue South, Minneapolis, Minnesota . . .

**MINNEAPOLIS-HONEYWELL REFRIGERATION**  
THE POLARTRON SYSTEM OF FROST-FREE REFRIGERATION

*Control* SYSTEMS

## Norge Sales Executives Team Up To Produce Materials of War



From selling washers to manufacturing mounts for the deadly Oerlikon anti-aircraft gun may seem like a far cry, but that was the war-time shift made by Earl R. (Duke) Bridge and R. H. (Rube) Pizor (left to right, of the Norge division, Borg-Warner Corp. Bridge was in charge of Norge washer sales for many years and Pizor was closely associated with him for nine years. Here they are talking to O. H. Shenstone, plant manager.

For many months now both have continued their team work at the plant of the Norge Machine Products division, Borg-Warner Corp., at Muskegon, Mich. This new division was created before Pearl Harbor in the hope and expectation of making a substantial contribution to the war effort. A vacant plant in Muskegon was purchased, completely reconditioned, equipped with newly-purchased machinery and staffed by new management personnel.

For want of a title, Bridge might be called assistant to O. H. Shenstone, plant manager, but his duties would be more clearly defined by stating that he is a super-coordinator among the 10 major departments of the plant. He himself explains his work by saying, "If we fail to produce gun mounts on schedule, it's my fault."

Pizor's job is easier to define. He fills the intermediate step between personnel and management without the title but with the duties of a labor relations manager.

Walk through the plant with either of these former sales executives and you will hear many first-name greetings banded back and forth with men on the bench. For both Bridge and Pizor have applied some of the first principles of good salesmanship to production management and have helped considerably in building an employe morale that is leading to a constantly expanding production.

## Urge Early Buying Of Materials For Converting Stoves

WASHINGTON, D. C.—Stove pipe and elbows undoubtedly will be scarce next fall and the demand probably will be considerably greater because of increased conversion of oil heating units to coal operation in fuel-rationed states, the Plumbing and Heating Division of WPB stated recently.

Dealers and jobbers of these products are urged, therefore, to place their orders early. It is contemplated that manufacturers will have a steady production throughout the year and the placing of early orders will help relieve the shipping situation in the fall months.

Because of shipping conditions, the division points out, the larger dealers and distributors should place carload orders and, where possible, the smaller dealers should pool their orders to enable manufacturers to make carload shipments.

## Earle Latham To Head Firm's Newark Branch

NEWARK, N.J.—Leslie E. Latham, president of E. B. Latham & Co., of 250 Fourth Ave., New York, distributor of refrigerators, radios and electrical supplies and equipment, announced March 16 the appointment of Earle B. Latham as general manager of the firm's Newark branch at 1010 Broad St.

## Westinghouse 'Gas' Charger Is Now Soldier's 'Health Bomb'

MANSFIELD, Ohio—Small "steel can" charging bombs originally developed for filling electric refrigerators with refrigerant have proved design for an insecticide gun being used now by the U. S. Army Medical Corps to exterminate disease-carrying mosquitoes.

A Westinghouse refrigeration engineer helped develop the bomb some years ago.

The refrigeration-born device consists of a metal container (somewhat resembling a small bomb) about the size of an average tin can but capable of withstanding high internal pressure.

In refrigeration, the bomb is filled under pressure with the exact amount of "Freon" refrigerant required for one refrigeration system, and is attached and discharged into a completed refrigerator unit.

As an Army insecticide gun, the bomb becomes the magazine, the simple capillary tube acts as both trigger and barrel, and Freon gas under pressure is the explosive charge.

"Bullets" for the mosquito gun are a liquid deadly to cold-blooded forms of life but harmless to humans. Formula was discovered by a member of the U. S. Department of Agriculture. It consists largely of an extract of Pyrethrum flowers, recently transplanted from their native Japan to British East Africa, properly combined with oil of sesame, an East Indian herb.



A soldier demonstrates use of the new insecticide dispenser.

To positively kill mosquitoes, however, the two agents must be carried by some vehicle that can instantly convert them to a fine mist or aerosol. Spray equipments available at the time the liquid was developed were too bulky and heavy for successful use. The refrigerator bomb, however, provided an almost ready-made gun to fire against yellow fever and malaria carrying insects.

Spray from the insecticide bomb is so penetrating that it does not have to strike mosquitoes directly but seeks them out and kills them even when hidden in the tiniest cracks.

## Finnell Has New Post With Westinghouse

EAST PITTSBURGH — Appointment of Thomas C. Finnell as manager of the industrial department in the eastern district of the Westinghouse Electric and Mfg. Co. was announced recently by James Boyd, eastern district manager.

Mr. Finnell succeeds C. W. Miller, who was named manager of the application department of the Westinghouse radio division at Baltimore.

## Government Agencies 'Put on the Spot' About Subcontracting

WASHINGTON, D. C.—Letters from the Smaller War Plants Corp. requesting a report by April 7 on the "extent and terms upon which prime contractors with the government have let sub-contracts" have been made public by Colonel Robert W. Johnson, chairman of SWPC and vice chairman of WPB.

Addressed to the Secretary of War, the Secretary of the Navy, the chairman of the Maritime Commission, and the Director of Treasury Procurement, each of the four identical letters encloses a list of 252 large corporations "which have the preponderance of war contracts to date" together with the dollar value of contracts they hold.

Col. Johnson reminds the Services in his letter that Section 2 of the SWP Act makes it his duty to take appropriate action to bring about sub-contracting upon fair and equitable terms in the greatest volume practicable.

Citing a similar request on Dec. 15 which was virtually ignored, Col. Johnson says, "In order to carry out the Congressional mandate, we must know how effective sub-contracting methods are. I am requesting that you secure from your prime contractors the information required and furnish the Smaller War Plants Corp. a report which will show, as of March 1, 1943 for the corporations listed, the following information: (a) The number and dollar value of prime and sub-contracts. (b) The methods being used by the corporation to increase sub-contracting. (c) Methods used to insure that sub-contracting is being done on a fair and equitable basis.

"I am aware that some of the services have succeeded in getting some prime contractors to spread the work, and that some contractors have set up adequate reporting systems so that the information requested will be readily obtainable. Others, I feel certain, are not doing so well."

While Col. Johnson confines his request to the 252 listed corporations, he makes it known that the same information will be drawn from other prime contractors in the future.

"In order to incorporate this information in the next report to Congress, it will be necessary to have the reports in the hands of the SWPC not later than April 7, 1943," he states at the end of his letter.

**The Machine For Your Next Job...**  
If it's a refrigeration job...no matter how big or how small...we can supply Lipman equipment to fit the specifications.  
Let us work with you.  
**GENERAL REFRIGERATION DIVISION**  
Yates-American Machine Co.  
Dept. AC-3, Beloit, Wis.

Model 153 Water-cooled Machine

**They'll All Come Marching TO A**

**KOOL-AIRE Beverage Dispenser**

SOLDIER or Sailor, Civilian or Defense Worker...all call for beverages that refresh and relax...turn the parade your way with a KOOL-AIRE Beverage Dispenser that attractively displays, properly chills and cleanly serves favorite non-carbonated beverages.

Whether you may operate a Canteen, Cafeteria, Hotel, Restaurant or Industrial Lunchroom, this portable ice-cooling KOOL-AIRE Beverage Dispenser enlarges your sales opportunities. It is designed and constructed for long time service. With it you can feature your choice of fast-selling non-carbonated beverages, syrups and concentrates.

Keep them marching your way for refreshment and enjoy increased sales and greater profits! Available in either 4-unit or 6-unit sizes...get complete details today.

**STEEL CITY MFG. CO.**  
WART BUILDING Youngstown, Ohio

**THE MARLO UNIDRIVE DOES THE WORK OF TWO**

In Marlo Wet-Type Air Units, motor, fan and pump are hooked together as one assembly. They are operated simultaneously by one single drive—the Marlo Unidrive.

This simple design gives Marlo products proper belt tension and automatic take-up for stretch. Special extended shaft type motors and pumps are eliminated, permitting easy field replacement. The Unidrive assures electrical simplicity, safety and efficiency.

Dry-Type Units, which require no pumps, are equipped with adjustable sheaves for all drives within 2 belt sizes.

**MARLO**  
UNIT COOLERS • INDUSTRIAL COOLERS  
MARLO MEANS HEAT TRANSFER EQUIPMENT

**HAVE YOU BOUGHT YOUR WAR BONDS TODAY?**

**MARLO COIL COMPANY**  
ST. LOUIS, MISSOURI

## Refrigeration and Air Conditioning As a War Production Tool

By L. W. Clifford, Sales Development Section Supervisor,  
Westinghouse Electric & Mfg. Co., East Springfield, Mass.

### Air Conditioning of Low Pressure Chambers

The ever-increasing use of the stratosphere as a "highway of the sky" for transport, for high-level bombing and for actual combat has created a need for exhaustive study of the behavior of aircraft engines, instruments and personnel under the atmospheric conditions peculiar to the stratosphere.

For these studies special chambers have been constructed wherein these atmospheric conditions of reduced pressure and/or temperature can be reproduced.

The following chart indicates the pressures and temperatures encountered at various altitudes from 5,000 feet to the ceiling of human endurance.

Altitude In Feet	Pressure In PSI	Temperature ° F.
5,000 Ft.	12.2 Lbs.	41.2°
10,000 Ft.	10.1 Lbs.	23.3°
20,000 Ft.	6.8 Lbs.	-12.3°
30,000 Ft.	4.4 Lbs.	-48.0°
40,000 Ft.	2.7 Lbs.	-67.0°

In certain types of studies the chambers are so designed that both temperature and pressure can be reduced simultaneously at a rate

equivalent to that actually encountered in a plane which takes off from the earth and climbs (at approximately 1,000 feet per minute) to the 40,000 foot level.

In other studies only the pressure drop is simulated and the reaction of equipment and personnel is closely checked. In this type of study it has been found that, during the hour or hour and a half that the students are in the low pressure chamber for test, the relative humidity and temperature in the chamber gradually increases due to the occupancy load.

In order that the low-pressure chamber can be quickly prepared for testing the next group of students the room in which the low-pressure chamber is located is air conditioned and when the chamber doors are opened following each test, fans are used to force the conditioned air into the chamber and restore normal conditions throughout its interior.

The room containing the low-pressure chamber is usually held at 70°-75° F. with a 45% R.H.

An interesting phenomena, so to speak, has been discovered in that pilots undergoing tests in the low-pressure chamber will not "wash out" as quickly in 70° air as they would when subjected to the same pressure with higher temperature air

such as would be encountered with-out air conditioning.

By virtue of the heat leakage outward through the chamber wall during the test and the complete renewal of the chamber air by the fans between tests, the student reactions will be more consistent.

At an Army Air Corps Gunnery School, Unitaire is used to condition the room housing the chamber.

Another 7½ ton Unitaire is being installed at a West Coast Army Air Field to reduce room temperatures in the room in which the low pressure chamber is located.

### 'How To Select Motor Control' Data Available

SCHENECTADY, N. Y.—How to select and apply motor control, popularly called the brains of electric drive, is explained in a new, easy-to-read, 16-page General Electric manual (GEA-4015), "Simplified Guide to the Selection and Application of Commonly Used Motor Controls."

Starting with a simple analysis of the functions of control, the booklet next describes the basic control parts of industrial devices. Following this is a discussion of the selection of correct control, explaining how to choose between manual or magnetic, and when reduced-voltage starting is necessary.

The balance of the manual is devoted to a progressive breakdown of standard controls available, describing their operation and function, and to a description of enclosures for industrial control devices.

Free copies are available on request.

## 'Victory Model' Alarm Clock Program Ready; May Set Style For Other Fields

No Product Names Permitted; All Dealers To Handle It

WASHINGTON, D. C.—War workers soon will be able to buy war alarm clocks, the Consumers Durable Goods Division stated recently in reporting development of a clock manufacturing industry-WPB program to produce 1,700,000 spring-wound clocks for civilian use.

Samples of the new models already have been submitted to OPA for price determination. These samples represent a big change in use of critical metals compared to pre-war models.

Only a single model of the clock will be produced. No metal is used in the case, and the alarm is of the simple ball type, designed to be efficient and loud.

No brand name or trade mark will appear on the clocks. They are to be produced by two or three individual manufacturers, and distributed by the whole industry. However, identification of the actual manufacturer will appear on the clocks for service and repair purposes.

Proposed distribution of the war alarm clocks calls for providing a supply to every pre-war manufacturer in the field, proportionate to the production of each during a specified base period. Relocation of population due to shifting of workers to war-production areas also will be considered in distribution of each

manufacturer's allotment. Distribution will be made through the established wholesale-retail machinery and the first models are expected to be available for war workers by April 1. Details of the distribution will be set out in a WPB order to be issued shortly.

Two manufacturers already are engaged in production of the war alarm clocks through appeals granted by WPB for supplementary materials needed to manufacture the clocks.

Production of alarm clocks, normally at the rate of about 12,000,000 annually, was halted in June, 1942, by Conservation Order No. M-9-c which prohibits the use of copper and brass in hundreds of civilian items. By mid-December, 1942, the shortage caused had become acute, causing difficulty for thousands of war workers late at their jobs because of the inability to obtain alarm clocks of any kind.

On Dec. 19, the Non-Jeweled Clock and Watch Industry Advisory Committee met with government officials to discuss the problem and possible relief. From this and later discussions, evolved the program for production of spring-wound alarm clocks in models using the minimum of critical metals, and to be produced for the entire alarm clock industry by a limited number of manufacturers.

## 'No Basic Changes In CMP' Krug Declares; Plans To Make It Fully Effective by July 1

WASHINGTON, D. C.—American industry engaged on war production today was given assurances that problems connected with putting the Controlled Materials Plan into operation are being ironed out as rapidly as possible, and that necessary adjustments should be made by July 1, when the plan is scheduled to go into full effect, declares J. A. Krug, Program vice chairman, who made this statement in commenting on a letter sent to WPB officials by the Automotive Council for War Production.

Mr. Krug also revealed that he and other WPB officials are to discuss the problems with representatives of the Automotive Council promptly, with an eye to straightening out any difficulties which exist before they can threaten the rising production curve.

No basic changes have been made in CMP, Mr. Krug said, and any adjustments necessary can be made within the framework of the plan as constituted.

"Because difficulties and a certain amount of confusion were expected," Mr. Krug said, "we explained when the Plan was first announced last November that a transitional procedure would be used during the second quarter of 1943, before CMP

goes into full operation on July 1. This transitional procedure, including authorizations for companies under the Production Requirements Plan to obtain materials in the second quarter, will assure the flow of materials to war plants in the second quarter.

"The job of distributing allotments of controlled materials through 13 claimant agencies will not be perfect the first time. There will be cases in the first go-around where allotments do not exactly match approved production schedules. Producers have been advised to make up differences if possible through use of inventory. Where an actual stoppage of production might be threatened, they can obtain relief by application to the claimant agency. It will be necessary to readjust some production schedules as well as the preliminary allotments, but all of this is to be expected in putting production on a strict allotment basis.

"Harold Boeschstein, who has been in charge of the administration of the Controlled Materials Plan since it was first announced, has been working steadily with his staff to eliminate difficulties in CMP which show up only when it actually begins to operate."

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METHYL CHLORIDE

NOW!



Important

Don't let idle cylinders hold up supplies now available. Look through your stocks and warehouses for any empty cylinders, or cylinders which can be emptied...and return them promptly.

We expect to be able to supply the current requirements of the refrigeration industry for Methyl Chloride, subject to the regulations of the War Production Board. Order what you need but please do not stock up unnecessarily. Electrochemicals Department, E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware.



METHYL CHLORIDE

Better Things for Better Living . . . THROUGH CHEMISTRY



Every one of us at the Penn Electric Switch Co., is wearing the Army and Navy "E" today—and a beautiful new pennant floats with the Star Spangled Banner and the Minute Man flag above our plant.

For this recognition of our work in producing lighting and firing circuits for navy guns, periscopes for army tanks, and gun-firing solenoids for navy planes, we are grateful.

We see in this more than an award for past achievement. It is a challenge to continued and increased effort. To meet that challenge all of us have pledged our unremitting effort...to support with our labors the men who fight our war...to keep the "E" flag flying...to dedicate our special skills and our production facilities to complete and final Victory.

Penn Electric Switch Co., Goshen, Indiana.

ARMY-NAVY "E"  
BADGE OF HONOR

is worn by all Penn employees, as a reminder of our pledge to surpass the record for which the Army and Navy "E" was given.

Penn



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

## Schedule IV to Order L-126 -- Specifications For Valves and Fittings and Other Parts

Part 1071—Industrial and Commercial Refrigeration and Air Conditioning Machinery and Equipment.  
(Schedule IV to Limitation Order L-126)  
Required Specifications for Refrigeration Valves, Fittings, Accessories, and Other Parts.

§ 1071.6 Schedule IV to Limitation Order L-126—(a) Definitions. For the purpose of this schedule:

(1) "Producer" means any person who produces, manufactures, processes, fabricates or assembles valves, fittings, accessories or parts to be used in a refrigerating or air conditioning "system," as defined in paragraph (a) (1) of Limitation Order No. L-126.

(2) "Valve" means any valve to be used in a refrigerating or air conditioning "system."  
(3) "Fitting" means any fitting to be used in a refrigerating or air conditioning "system," excluding wrought copper solder type fittings and pipe fittings other than hexagonal pipe bushings and hexagonal pipe plugs.

(4) "Accessory" means any accessory, assembly or part to be used in a refrigerating or air conditioning "system."

(5) "Part" means any part designed for use in any refrigerating or air conditioning "system," if fabricated in whole or in part from corrosion-resistant or heat-resistant alloy iron or alloy steel, containing 4% or more by weight of chromium.

(b) Required specifications. Pursuant to Limitation Order No. L-126 the following required specifications are hereby established for valves, fittings, accessories, and parts:

(i) In the production of valves, no producer shall use non-ferrous metals, except for:

(i) Valves of the types and in the sizes named and described in List A issued with this schedule, and  
(ii) Valve seats, gaskets, bonnets, disc screws, and plating of valve stems, for use in valves of the types and in the sizes named and described on List B issued with this schedule.

(2) In the production of fittings, no producer shall use any non-ferrous metals except for fittings of the types and in the sizes named and described on List C issued with this schedule.

(3) In the production of accessories, no producer shall use any non-ferrous metals for any accessories of the types named on List D issued with this schedule, except for bulbs, bellows, screens, gaskets, small moving parts and capillary tubing less than 1/4" (O.D.).

(4) In the production of liquid indicators, manifold tubes or bars, strainers, dehydrators, and filters, designed for use in any system, no producer shall use any ferrous or non-ferrous metal except for such items of the types and in the sizes named and described on List E issued with this schedule.

(5) In the production of parts, no producer shall use any corrosion-resistant or heat-resistant alloy iron or alloy steel, containing 4% or more by weight of chromium, except for the following:

(i) Diaphragm, needle, seat, and push pins of refrigeration expansion valves; and  
(ii) Small moving, contact, or orifice parts where corrosion or erosion make

it impossible to use parts made from other materials, including such parts in diaphragm relief valves, suction pressure regulators, solenoid valves, cartridge relief valves, and float regulator valves, and then only to the extent necessary.

(6) In the production of the items named and described in the following numbered section of the lists issued with this schedule, no producer shall produce a greater number of types, sizes, forms, or designs than are designated in such sections: List A, Sections 6 and 13; List B, Section 3; List E, Section 3.

(c) Applicability of this schedule.

(i) The required specifications established by subparagraphs (1) to (5) inclusive, of paragraph (b) shall not apply to, or prohibit the production, fabrication, delivery, acceptance or installation of:

(i) Valves, fittings, and accessories which are not named on said Lists A, B, C, D, or E or not included in the sizes listed on said lists, if for use aboard ship or at advanced bases by the Army or Navy of the United States, the Maritime Commission, or the War Shipping Administration.

(ii) Valves, fittings, and accessories for delivery to or for the account of, and for direct use by, the Army, Navy, Maritime Commission, or War Shipping Administration, delivered within 90 days after April 6, 1943, to the extent that any applicable specifications of any such organization require construction, design, or materials not in accordance with the provisions of this schedule.

(iii) Valves, fittings, and accessories not in conformity with paragraph (b) of this schedule, from parts which were in process of fabrication or in the form of forgings on April 6, 1943, during a period of 60 days only following said date.

(iv) Compressor valves and angle valves in sizes and types not on List A or List B, to be used for repair and maintenance only, using either ferrous or non-ferrous metals.

(d) Effective date, April 6, 1943.

1. Line valves packless, two-way (or globe):

SAE Flare: 1/4" x 1/2" 1/2" x 3/4" 3/4" x 1" 1" x 1 1/4" 1 1/4" x 2" 2" x 2 1/2" 2 1/2" x 3" 3" x 3 1/2" 3 1/2" x 4" 4" x 4 1/2" 4 1/2" x 5" 5" x 5 1/2" 5 1/2" x 6" 6" x 6 1/2" 6 1/2" x 7" 7" x 7 1/2" 7 1/2" x 8" 8" x 8 1/2" 8 1/2" x 9" 9" x 9 1/2" 9 1/2" x 10" 10" x 10 1/2" 10 1/2" x 11" 11" x 11 1/2" 11 1/2" x 12" 12" x 12 1/2" 12 1/2" x 13" 13" x 13 1/2" 13 1/2" x 14" 14" x 14 1/2" 14 1/2" x 15" 15" x 15 1/2" 15 1/2" x 16" 16" x 16 1/2" 16 1/2" x 17" 17" x 17 1/2" 17 1/2" x 18" 18" x 18 1/2" 18 1/2" x 19" 19" x 19 1/2" 19 1/2" x 20" 20" x 20 1/2" 20 1/2" x 21" 21" x 21 1/2" 21 1/2" x 22" 22" x 22 1/2" 22 1/2" x 23" 23" x 23 1/2" 23 1/2" x 24" 24" x 24 1/2" 24 1/2" x 25" 25" x 25 1/2" 25 1/2" x 26" 26" x 26 1/2" 26 1/2" x 27" 27" x 27 1/2" 27 1/2" x 28" 28" x 28 1/2" 28 1/2" x 29" 29" x 29 1/2" 29 1/2" x 30" 30" x 30 1/2" 30 1/2" x 31" 31" x 31 1/2" 31 1/2" x 32" 32" x 32 1/2" 32 1/2" x 33" 33" x 33 1/2" 33 1/2" x 34" 34" x 34 1/2" 34 1/2" x 35" 35" x 35 1/2" 35 1/2" x 36" 36" x 36 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# Text of Limitation Order L-38 as Amended

## TITLE 32—NATIONAL DEFENSE CHAPTER IX—WAR PRODUCTION BOARD

### Subchapter B—DIRECTOR GENERAL FOR OPERATIONS

#### Part 1071—INDUSTRIAL AND COMMERCIAL REFRIGERATION AND AIR CONDITIONING MACHINERY AND EQUIPMENT

General Limitation Order L-38 as amended March 27, 1943.

Section 1071.1 (General Limitation Order L-38, as amended) is hereby amended to read as follows:

The fulfillment of requirements for the defense of the United States has created a shortage in the supply of steel, copper, and other materials for defense, for private account and for export; and the following order is deemed necessary and appropriate in the public interest and to promote the national defense:

Section 1071.1 General Limitation Order L-38

(a) **DEFINITIONS.** For the purpose of this order:

(1) "System" means any refrigerating or air conditioning system, consisting of an assembly or combination of machinery, equipment, or other apparatus designed primarily to lower the temperature of, or remove water vapor from gaseous, liquid, or solid matter, directly or indirectly, by mechanical, chemical, or physical means. The term shall not include a domestic mechanical refrigerator as defined in paragraph (a)(11), a domestic ice refrigerator as defined in paragraph (a)(12), or a farm milk cooler as defined in paragraph (a)(13) of this order.

(2) "Parts" means any parts, materials, insulated enclosures, implements, or devices, designed for incorporation in a system or for use therewith in causing it to perform its functions.

(3) "New," when applied to any system or part, means a system or part that has never been sold and delivered to any person acquiring it for use. "Used," when so applied, means any system or part which has been so sold and delivered, regardless of whether or not it has subsequently been reconditioned or redesigned.

(4) "Authorized order" means any order for the delivery of a system or parts, which the Director General for Operations has authorized on Form PD-830 or PD-831 pursuant to paragraph (c) of this order.

(5) "Person" means any individual, partnership, association, business trust, corporation, governmental corporation or agency, or any organized group of persons, whether incorporated or not.

(6) "Producer" means any person to the extent that he is engaged in the manufacture, fabrication, or assembly of systems or parts. The term shall not include any sales or distribution outlet of a producer.

(7) "Dealer" means any person, other than a producer, engaged in the business of selling or distributing new, used, or reconditioned systems or parts, whether at wholesale, retail, or otherwise. The term includes any sales or distribution outlet of a producer.

(8) "Emergency repair service" means the repair of any installed system when, subsequent to its installation and operation, a breakdown occurs therein, or is immediately threatened. The term shall not include replacement of the high (pressure) side or condensing unit (with or without motor or condenser) except in sealed unit types, the low (pressure) side, or the insulated enclosure, or any change of the type of refrigerant, design, or capacity of the system; but shall include necessary replacement of any component part of the high side, low side, or insulated enclosure, if such part cannot be repaired and if the part installed is not of greater capacity than the part replaced, and shall also include the shop repair of the replaced component part.

(9) "Deliver" means to transfer physical possession, title, or ownership to another person, to install, or to place in the hands of any carrier or otherwise in transit for transfer of possession to another person, regardless of whether such transfer, installation, or shipment is for the purpose of sale, trade, loan, lease, or some other type of transaction.

(10) "Domestic Mechanical Refrigerator" means any refrigerator for household use which operates either by compression or absorption and which has a net capacity of 16 cubic feet or less (National Electrical Manufacturers Association rating), but does not include any low temperature mechanical refrigerator designed for the storage of frozen foods or for the quick freezing of food where the low temperature compartment customarily operates at a temperature of not higher than 15° above zero Fahrenheit and contains 75% or more of the total refrigerating space in the refrigerator.

(11) "Domestic Ice Refrigerator" means any non-mechanical ice chest or ice box for home use.

(12) "Farm milk cooler" means any immersion (drop-in) type or surface (tubular) type milk cooler for use on a farm, and includes any system or parts which have been installed in any such cooler, or acquired pursuant to an "authorized order" (as defined in subparagraph (a)(4) by a manufacturer of farm milk coolers for installation in such coolers. The term shall not include any (refrigerating) system or parts (except the cabinets and insulated enclosures of farm milk coolers) prior to actual acquisition thereof by such a manufacturer.

(13) "Industrial type extended surface heating equipment" means any apparatus employing a heat transfer element and designed primarily to increase the temperature of gaseous matter, in connection with the operation of any refrigerating or air conditioning system.

(14) "Industrial type humidifying equipment" means any apparatus designed primarily to add water vapor to gaseous matter, in connection with the operation of any industrial or commercial refrigerating or air conditioning system, or for any purpose other than the health or comfort of persons.

(15) "Comfort cooling system" means any system described as such on List F (made a part of this order) as amended from time to time.

(16) "Owned," when applied to any materials means such materials as were in the possession or control of the designated person, or in transit to him, on the date indicated.

(17) "Any person acquiring the same for use" shall include any person who purchases or otherwise acquires any systems, parts, or other equipment, except a dealer or producer acquiring systems, parts, or other equipment for resale, and reselling the same.

(b) **RESTRICTIONS ON DELIVERIES.**  
(1) **Parts for repair service.**  
(i) No dealer or producer shall deliver any new or used parts to the owner, lessee, or user of any used system, and no person shall accept delivery of any such parts, unless such parts are delivered either (a) for use in "emergency repair service" and to fill a purchase order bearing a preference rating of AA-4 or higher, or (b) to fill an "authorized order," or (c) for direct use by the Army, Navy, Maritime Commission, or War Shipping Administration, including orders for any Army or Marine Corps Post Exchange or any Navy Ships Service Department; and the parts replaced shall be disposed of in accordance with paragraph (e) of this order, if made of metal; and

(ii) No dealer or producer shall deliver any new or used parts to the owner, lessee, or user of a "comfort cooling system" for the repair of such system, except pursuant to an "authorized order," or pursuant to a purchase order bearing a preference rating of AA-4 or higher where all the parts necessary for the "emergency repair service" for such system do not have an aggregate sales value in excess of the following: (a) \$25 where the aggregate installed capacity is not over 20 hp. or tons of refrigeration (ASRE specifications), (b) \$50 where such capacity is over 20 hp. or tons but not over 100 hp. or tons, or (c) \$100 where such capacity is over 100 hp. or tons. (If the parts required are to be obtained under several purchase orders placed either with the same supplier, or with different suppliers, so that the value of the parts furnished under each or any of such orders is less than the amounts specified above, such division shall not avoid the restriction of this subparagraph (ii)). No such order for parts (having a value in excess of the applicable amount specified above) will be authorized unless it is demonstrated to the satisfaction of the Director General for Operations that the continued operation of such "comfort cooling system" is essential to avoid air conditions which would be intolerable or dangerous to health, and that such conditions cannot be avoided by the use of that portion of the system designed for the circulation of air, electric fans, or other power driven equipment possessed by the owner, lessee, or user of the system and/or by opening of windows or doors. No person shall accept delivery of any parts for the repair of a "comfort cooling system," except in accordance with the provisions of this subparagraph (ii).

(2) **Other Equipment.**  
(i) **List A items.** Any dealer, producer, or other person may deliver (unrestricted by this order) and any person may accept delivery of, any new or used item of equipment of any kind or type included on List A (made a part of this order as amended from time to time), or any new or used parts acquired by such dealer, producer, or other person prior to May 15, 1942 for use in any such equipment owned by him on May 15, 1942, except a new refrigeration condensing unit rated at more than 1/2 hp. and designed for remote installation.

(ii) **List B, Part I, items.** No dealer or producer shall deliver any new item of equipment of any kinds included on List B, Part I, (made a part of this order as amended from time to time) to any person acquiring the same for use, except pursuant to an "authorized order" to an agency or other person designated on said list; and no person shall accept delivery of any such item of equipment except such an agency.

(iii) **Items for farm milk coolers.** No dealer or producer shall deliver any new (refrigerating) systems for use in farm milk coolers or parts for such systems other than the cabinets or insulated enclosures, to a manufacturer of such coolers or any other person, except pursuant to an "authorized order." The subsequent delivery of any such systems or parts acquired pursuant to an "authorized order" by such a manufacturer, or owned by him on April 6, 1943, or of any farm milk coolers in which any such systems or parts have been installed, shall not be restricted by the terms of this order.

(iv) **Items exclusive of List A and List B items and farm milk coolers.** No dealer or producer shall deliver any new system of any kind or type, not referred to under the preceding subparagraphs (i), (ii), (iii), or (iv), to any person acquiring the same for use, except pursuant to an "authorized order," or for direct use by the Army, Navy, Maritime Commission, or War Shipping Administration.

(v) **Parts not for emergency repair service.** No dealer or producer shall deliver any new parts of any kind or size, or any used high side, compressor, turbo blower, condenser, low side, or evaporator, designed for use with a system rated at 3 hp. or more or having a rated capacity of 3 tons or more (American Society of Refrigerating Engineers' Specifications) to any person acquiring the same for use other than for emergency repair service, except pursuant to an "authorized order," or for direct use by the Army, Navy, Maritime Commission, or War Shipping Administration.

(vi) **Heating or humidifying equipment.** No dealer or producer shall deliver any new "industrial type extended surface heating equipment" or any "industrial type humidifying equipment" to any person acquiring the same for use, except pursuant to an "authorized order," or for direct use by the Army, Navy, Maritime Commission, or War Shipping Administration.

(vii) **List C.** No purchase order for any equipment referred to under subparagraphs (v), (vi), or (vii) above will be authorized if such equipment is not to be used for a purpose described on List C (made a part of this order) as amended from time to time.

(viii) **Report of orders placed under (iii), (v), (vi), and (vii) for Army, etc.** On or before the 10th day of April, 1943, and the 10th day of each succeeding calendar month, each producer shall file with the War Production Board a letter, in triplicate, showing all orders accepted by him during the preceding calendar month for any new system referred to under subparagraph (iii) above, or any new equipment referred to under subparagraph (v) above, or any new major part (high side, compressor, turbo blower, condenser, insulated enclosure, low side, or evaporator, of any size) referred to under subparagraph (vi) above, and delivered, or to be delivered, to or for the account of (and for direct use by) the Army, Navy, Maritime Commission, or War Shipping Administration. Such letter shall also state the name of the purchasing agency, the name and address of the purchasing officer, the date of acceptance of such order, the required delivery date, and a brief description of the quantity, type, and size of the equipment ordered and the purchaser's order number. Copies of such purchase orders may be filed with such letter to furnish such detailed information, in lieu of incorporating the same therein. (This reporting requirement approved by the Bureau of the Budget in accordance with Federal Reports Act of 1942.)

(ix) **As used in this subparagraph (b)(2), the words "Army" and "Navy," shall not include any Army or Marine Corps Post Exchange or any Navy Ships Service Department.**

(c) **Method of securing authorization for an "authorized order."**  
(1) (i) Application for the authorization required to make any purchase order an "authorized order" shall be made to the War Production Board by the person seeking to place such order, on Form PD-830 if the system or parts to be purchased are required for use in any cold storage warehouse, industrial or commercial ice plant, frozen food locker plant, food processing plant (except a dairy or ice cream plant requiring equipment having a capacity of five (5) hp. or five (5) tons (ASRE specifications) or less), industrial processing of products other than food, refrigerated railroad car, truck, or ship, or any air conditioning installation of any size; and on Form PD-831, if for any other purpose.

(ii) The filing of such application shall relieve the applicant from the necessity of filing the application form required to obtain authorization for the placing or acceptance of a purchase order for any component part subject to Orders L-100, L-163, or L-172, to be included in the system covered by said application, and the inclusion of such component part in the production or delivery schedule of the manufacturer thereof.

(iii) If the system, parts, or other equipment required are for use in construction work subject to the terms of Conservation Order L-41, as amended from time to time, the application on Form PD-830 or PD-831 shall include only such materials as are necessary for installation of the system, parts, or other equipment covered thereby.

(2) The Director General for Operations may authorize any such order on Form PD-830 or PD-831 upon such conditions, if any, as he shall specify (except as to dates of production and delivery), and may assign a preference rating thereto or rate any such order. Such authorization will be issued to the applicant upon one of said forms, and will be accompanied by separate authorizations for each of the component parts included therein if required under Orders L-100, L-163, and L-172 of the War Production Board for the purposes specified, which shall be transmitted by the purchaser to his supplier, and by the latter to his

suppliers of component parts when necessary for delivery of such component parts. Nothing in this order, however, shall relieve any manufacturer from filing any periodical reports of production or delivery schedules or other operations, or from complying with any requirement or direction which may be issued by the Director General for Operations, as to scheduling or rescheduling of production or deliveries of any such component parts, as required by any other order of the War Production Board including Orders L-100, L-163, and L-172, or any specific directions from the Director General for Operations.

(3) Deliveries of any component parts covered by any such accompanying authorizations shall be made in accordance with the terms of such authorizations and the War Production Board Orders pursuant to which they are respectively issued.

(d) **Restrictions on production.**  
(1) **Types and uses prohibited altogether.**  
(i) **List D items.** No producer shall manufacture any new system or equipment of any kind named or described on List D (made a part of this order) as amended from time to time, for delivery to any person or for any purpose.

(ii) **List E items.** No producer shall manufacture any new system or equipment of any kind named or described on List E (made a part of this order) as amended from time to time, except for direct use by an agency or person designated on said List and for a purpose (if any) designated thereon.

(iii) **Refrigerators and walk-in coolers.** No producer of reach-in refrigerators or prefabricated sectional walk-in coolers shall manufacture any such refrigerators or coolers for any purpose other than for direct use by the Army, Navy, Maritime Commission, or War Shipping Administration, unless manufactured entirely from parts or materials owned by such producer on April 6, 1943; except, however, that any such producer may acquire from another such producer any such parts or materials owned by the latter on such date, and may use such acquired parts or materials in such manufacture. As used in this subparagraph (iii), the words "Army" and "Navy" shall not include any Army or Marine Corps Post Exchange or any Navy Ships Service Departments.

(2) **Production for permitted types or uses.**  
(i) No producer shall commence the manufacture of any compressor or turbo blower for use in any high (compression) side rated at fifty (50) hp. or fifty (50) tons (ASRE specifications) or over, unless and until such producer shall have received an "authorized order" for such compressor, turbo blower, or high side or for a system in which the same is to be used or an order for such a compressor, turbo blower, or high side to be used directly by the Army, Navy, Maritime Commission, or War Shipping Administration, which has been reported by such manufacturer in accordance with subparagraph (b)(2)(ix) above; and

(ii) No producer shall manufacture a greater quantity of any type of system or parts for assembly into new systems (exclusive of compressors and blowers of the sizes described under (d)(2)(i) above, and exclusive also of replacement parts described under (3) below), production of which is permitted under the terms of this order, than the following:

During the calendar quarter beginning April 1, 1943, or during any succeeding calendar quarter, no producer shall manufacture a quantity of any system or part in excess of the greater of the two quantities of such system or part determined as indicated in (a) and (b) below:

(a) the number of such new item for which the producer has on hand unfilled orders bearing a rating of AA-4 or higher; or

(b) the number of such new item delivered on order bearing a rating of A-1-J or higher during the next preceding calendar quarter.

(3) **Replacement parts; protection of production schedules.**  
(i) No producer shall manufacture replacement parts (for the repair or maintenance of systems) in such quantities that his production thereof will result in his acquiring an inventory of such parts in excess of his average monthly inventory of similar parts during the months of January, February, and March, 1943.

(ii) Producers of replacement parts under the terms of this order may, notwithstanding the provisions of Priorities Regulation No. 1 (Part 944), schedule their production of replacement parts as if the orders therefor bore a rating of AA-1, but subject to any specific directions which may be issued by the Director General for Operations as to the scheduling of production or deliveries of any such parts as required by any other order of the War Production Board, or by any specific direction from the Director General for Operations.

(4) **Restrictions on deliveries to producers.** No person engaged in the production or sale of component parts or sub-assemblies designed for incorporation in any larger assembly or system shall knowingly deliver any such parts or sub-assemblies to any producer for further fabrication or assembly into larger assemblies or systems if such producer is prohibited by the terms of this order; and no producer shall accept delivery of any such parts ordered for a use which has been prohibited by the terms of this order unless such parts of sub-assemblies are to be used for a purpose which is not prohibited.

(5) **Required utilization of replaced parts.**  
(i) In replacing any parts permitted under paragraph (b)(1) of this order, no dealer or producer shall deliver any part made of metal to the owner of the system to be repaired, unless such owner agrees that he will deliver the old part to the dealer or producer if directed to do so by the latter, and if not so directed, that he will dispose of the old part to a scrap dealer, within 30 days after installation of the newly installed part. Any person making such an agreement with a dealer or producer shall deliver or dispose of the old part accordingly; and all such old

(Continued on Page 17, Column 1)

## THE STANDARD OF Enduring Craftsmanship

Young Revere in his father's work shop — 1752



Paul Revere, silversmith, political leader, power mill designer, Revolutionary Lt. Colonel of Artillery in his early thirties, combined his great sense of craftsmanship with practical vision. In founding the great metal company bearing his name, Revere spanned in his lifetime, the often gradual transition from individual craftsmanship to great industrial development.



A great part of the value you get in Virginia products today is the fine craftsmanship exercised in every department of manufacture.

EXTRA DRY ESOTOO, V-METH-L AND METHYLENE CHLORIDE

**"VIRGINIA" REFRIGERANTS**  
AGENTS FOR KINETIC'S "FREON-12"

**VIRGINIA SMELTING CO.**  
WEST NORFOLK, VIRGINIA

## Text of Amended Limitation Order Covering Refrigeration Equipment

(Continued from Page 16, Column 5)

parts obtained by a dealer or producer during any calendar quarter shall either be repaired or replaced in his inventory, or returned to his supplier of new parts, or disposed of to a scrap dealer, during or within 30 days after the end of such quarter. Provided, however, that no block tin pipe shall be replaced unless an equal quantity thereof is returned to the fabricator, but

(2) The provisions of the preceding subparagraph (1) shall not apply:

(i) Where parts are delivered for installation in any system located outside of the United States at the time of such delivery; or

(ii) Where the system requiring repair is being used directly by the Army, Navy, Maritime Commission, or War Shipping Administration; or

(iii) Where the system requiring repair is owned by any Federal, State, or local governmental agency, bureau, department, or political subdivision which is prohibited by law from disposing of such replaced parts in the manner presented under the preceding subparagraph (1).

(f) Filing of report of inventories.

(i) On or before the 15 day of April, 1943, every producer shall file a report on Form FD-829 showing such producer's inventories and such other information as shall be required on said form.

(g) Exemptions.

(1) Certain specific transactions.

(i) The following shall be exempted from the terms of subparagraph (b)(1)(i): The repair, by (a) a bottler of carbonated beverages, or (b) a manufacturer of ice cream for resale, or (c) a person engaged in the business of leasing mechanical or non-mechanical drinking water coolers, or (d) any other person owning (refrigerating) systems or any type included on List A or List B and used by such owners or his lessees for dispensing food or beverages at retail, of any such systems owned by such person, using new parts owned by him on May 15, 1942, or used parts obtained from the dismantling of any such used system owned by such person; but no parts shall be delivered by any dealer or producer to any such person for the repair of any such system except for "emergency repair service" thereto;

(ii) The following shall be exempted from the terms of subparagraph (b)(2): (a) The temporary delivery of a used system or parts to a dealer or producer for repair and redelivery to the same owner, the redelivery of a repaired system or part to the same owner, or the loan of a new or used system or parts for a period not to exceed 30 days pending the performance of "emergency repair service" to a used system or parts; or

(b) The delivery of a used system or parts for junking or scrapping; or

(c) The delivery of new or used mechanical or non-mechanical drinking water coolers owned on May 15, 1942, by any person engaged primarily in the business of leasing such water coolers, to any other person (and acceptance thereof).

(iii) The following shall be exempted from the terms of subparagraphs (b)(2) and (d)(1)(i):

(a) The assembly, by any producer of single duty or double duty display cases, of any such cases, within 60 days after April 6, 1943, solely from parts which, on said date, had been fabricated or processed to the extent that use in any other type of equipment would be impracticable, if such parts were owned by such producer on said date, or were received within said period from any other such producer; and the delivery of such parts by any producer to any other producer; or

(b) The assembly by any producer of mechanical or non-mechanical drinking water coolers, of any such coolers not designed for use aboard ship, solely from parts or materials which, on April 6, 1943, had been fabricated or processed to the extent that use in any other type of equipment would be impracticable, if such

parts or materials were owned by such producer on said date; or are received from any other such producer; and the delivery of any such parts or materials by any producer to any other producer.

(2) Other transactions. The following shall be exempted from subparagraph (b)(2):

(i) Creation, assignment and enforcement of liens.

(a) The creation, or assignment of any chattel mortgage, deed or trust, conditional sales contract or other lien on any new or used system or parts;

(b) The transfer of title to, and/or delivery of, any new or used system or parts, through voluntary act or by operation of law, in bankruptcy, receivership, or assignment, to a trustee or receiver for the benefit of creditors;

(c) The attachment or seizure of any new or used system or parts by levy or other judicial process, on behalf of creditors or tax authorities, or the seizure of any such system or parts by any person upon default under the terms of a conditional sales contract, chattel mortgage or other lien (but subsequent deliveries thereof shall not be exempted).

(ii) Disposition of assets. The delivery of any new or used system or parts, whether incorporated in real estate or as separate personal property, as part of a larger transaction, such as a merger, consolidation, sale and purchase of entire assets, sale and purchase of entire stock and/or lease of plant, or similar transactions involving the transfer of all or substantially all of the assets of an enterprise, where no liquidation or dismemberment of assets is contemplated.

(iii) Transfers by Will or Intestacy. The delivery or transfer of any new or used system or parts by will, descent or distribution, to devisees, legatees, or distributees.

(h) Miscellaneous provisions.

(1) Applicability of Regulations. This order and all transactions affected thereby are subject to all applicable Regulations of the War Production Board, as amended from time to time, except to the extent that any provisions of this order may be inconsistent therewith, in which case such provision of this order shall govern.

(2) Records. All persons affected by this order shall keep and preserve for not less than two years accurate and complete records concerning inventories, purchases, production, and sales of systems and parts.

All records required to be kept by this order shall, upon request, be submitted to audit and inspection by duly authorized representatives of the WPB.

(3) Reports. All persons affected by this order shall execute and file with the War Production Board such reports and questionnaires as said Board shall from time to time request.

(4) Violations. Any person who wilfully violates any provisions of this order, or who, in connection with this order, wilfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime, and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using, materials under priority control, and may be deprived of priorities assistance.

(5) Appeals. Any appeal from the provisions of this order (or of Conservation Orders M-9-c or M-126 applicable to any systems, parts, or other equipment subject to the terms of this order) shall be made by filing a letter in triplicate, referring to the particular provisions appealed from and stating fully the grounds.

(6) Communications. All reports to be filed and other communications concerning this order should be addressed to: War Production Board, General Industrial Equipment Division, Washington, D. C., Ref.: L-38.

(j) This amendment shall become and be effective on and after April 6, 1943. It shall not affect, in any way, any liabilities or penalties accrued or incurred under General Limitation Order L-38 prior to this amendment.

Issued this 27 day of March, 1943.

### LIST A

Items which may be delivered unrestricted

- Beer pre-coolers
- Beverage dispensers
- Bottled beverage coolers, mechanical
- Bottled beverage coolers, non-mechanical
- Counter and back bar refrigerators
- Display cases, single duty
- Display cases, double duty
- Display cases, florist
- Display cases, frosted food
- Display cases, full vision
- Display cases, vegetable
- Display cases, all other types
- Dough retarding refrigerators
- Draft beer equipment
- Evaporative coolers, 2,000 c.f.m. or less
- Farm freezers (for the freezing and storing of food on a farm)
- Florist boxes
- Fountainettes
- Frozen food cabinets, low temperature, not designed for use aboard ship or for use in mobile hospital units.
- Ice cream cabinets, not designed for use aboard ship
- Ice cube makers, self-contained cabinet type
- Salad coolers (Bain Marie), mechanical
- Soda fountains, not designed for use aboard ship

Note: In no case shall the name or description of any equipment as listed above, include any fixture or item which is not within the meaning, as customarily used within the trade or industry, regardless of whether any particular fixture or item (not within such meaning) could be used for the purpose for which the equipment listed is customarily used.

### LIST B

Items which may be delivered only as indicated below

Type of Equipment	Deliveries Permitted For Direct Use By:
<b>Part I</b>	
1. Drinking water coolers, mechanical, not designed for use aboard ship.	Army or Navy
2. Drinking water coolers, non-mechanical, all sizes.	Army or Navy, or under "Authorized Order" to any person.
3. Evaporative coolers, over 2,000 c.f.m.	Army or Navy
4. Ice cream freezers, 20 quart capacity or less.	Army or Navy, for use aboard ship or in advanced bases (outside the 48 States and D. C.).
5. Mortuary refrigerators	Army or Navy
6. Portable bulk ice makers	Army or Navy
7. Self-contained unit air conditioners, 2 h.p. or less.	Army or Navy, or under "Authorized Order" to any person.
8. Wall type display refrigerators.	Army or Navy, or under "Authorized Order" to any person.
<b>Part II</b>	
a. Drinking water coolers, mechanical, designed for use aboard ship.	Army, Navy, Maritime Commission, or War Shipping Administration, for use aboard ship.
b. Frozen food cabinets, low temperature, designed for use aboard ship or for use in mobile hospital units.	Army, Navy, Maritime Commission, or War Shipping Administration, for use aboard ship or for use in mobile hospital units included but not limited to hospital cars.
c. Ice cream cabinets, designed for use aboard ship.	Army, Navy, Maritime Commission, or War Shipping Administration, for use aboard ship.
d. Soda fountains, designed for use aboard ship.	Army, Navy, Maritime Commission, or War Shipping Administration, for use aboard ship.

### LIST C—ESSENTIAL USES

Purposes for which refrigerator or air conditioning systems or major parts thereof (other than equipment included on Lists A, B, D, E) may be produced subject to the terms of Order L-38, as amended.

(All purchase orders are subject to approval under Order L-38, as amended, regardless of any preference ratings assigned and will be approved only

- for direct military use, or
- for any other use if new or enlarged refrigerating or air conditioning capacity are proven essential, or replacement is shown essential to the war effort. New systems in which any part of the capacity is included for air conditioning for the comfort, or to increase the efficiency of personnel, will not be approved).

**Part I—Applications to materials, producers or facilities:**

Mining, industrial, scientific, and technical processes and operations where lowering of temperature of, or removing water vapor from air, gases, materials, or products, or where freedom from dust and other impurities are proved necessary for production, storage, transportation, operation, or repair of materials or products, or precision functioning thereof, when, and to the extent proven essential for any of the following purposes:

1. Abrasives—production.
2. Aerial topography rooms aboard ship.
3. Airplanes and parts—production and repair.
4. Airport control towers.
5. Altitude and low temperature test chambers and laboratories.
6. Ammunitions and explosives—production, storage, and transportation.
7. Blood plasma—processing, storage, and transportation.
8. Blast furnaces (dry blast)—operation.
9. Ceramics, electric and dielectric—production.
10. Chemicals, including acids, gases, pigments and plastics, where new, additional or continuous productive capacity is essential—production.
11. Dairy products—processing, storage, dispensing and transportation, where essential.
12. Duplicating processes; such as, photographic, photostatic, and lithographic, processing and storage.
13. Communications products—production, or operation of relay stations and

14. Films, photographic, for military purposes—production and storage.
15. Fire control calculation rooms, underground fortifications, plotting—switch-board rooms, mine casemates, command posts, and seacoast battery service magazines.
16. Foods—processing, storage, dispensing and transportation, where essential.
17. Fur cloth for military purposes—storage.
18. Glass, non-shatterable—production.
19. Ice—production and storage, where essential.
20. Laboratories—research, analytical, and testing.
21. Navigation instruments—production, storage, and repair.
22. Optical goods; such as, bomb and gun sights, range finders, telescopes and microscopes—production, storage and repair.
23. Ordnance, precision parts—production.
24. Parachute and balloon production.
25. Pharmaceuticals, drugs and biological products, necessary for life or health—production, storage, and transportation.
26. Petroleum products—production, storage and transportation.
27. Plants and factories (including black-out) above ground or underground; where it is shown that otherwise unavoidable heat, contamination of air, or variations in temperature or humidity, would seriously impair the effective use or production of precision instruments, tools, or products essential in the war effort.
28. Precision instruments, tools or products—production, storage, operation and repair.
29. Synthetic critical products—production.

**Part II—Applications affecting human life or physical capacity.**

- a. Anesthesia units, refrigerating.
- b. Aboveground plants and factories (including black-out)—producing essential materials; where it is shown that otherwise unavoidable heat or contamination of air would be dangerous to health or result in intolerable working conditions; and then only to the minimum extent required.
- c. Celestial navigation trainers.
- d. Engine test calls.
- e. Hospital rooms, stationary or portable, military or civilian, for surgical operations or critical convalescent treatment (excluding normal hospitalization), X-Ray rooms and Flight Surgeons Clinics.
- f. Link trainer rooms.
- g. Naval vessels of all types.

(Concluded on Page 18, Column 1)



## WARTIME HELP

THESE are days when it takes a good deal of ingenuity and scurrying around to keep service and repair work under way—particularly on any item normally made of brass.

Imperial fittings, valves, tools, etc.—are pouring out by the millions for use on war equipment and production machinery. However, it is also important that refrigeration equipment be kept operating and the Imperial organization has been following a definite program to help out on this.

One such service is the Imperial Trading Post which has been established to enable Jobbers to draw on each other for stock of Imperial Products. For example, if a Jobber in one locality has an excess stock of an

item, it can be made available in another locality where the stock of that item is exhausted.

The Trading Post is sent to all Imperial Jobbers each month and they may list any Imperial products they have on hand which they would be willing to sell or trade to other Jobbers. Jobbers also may list items they would like to buy. This program has relieved many emergency situations.

The Imperial organization is working closely with Jobbers and the Industry Division of the War Production Board in order to render every possible assistance in the important job of keeping refrigeration equipment in good operating condition.

THE IMPERIAL BRASS MFG. CO., 565 South Racine Avenue, Chicago, Illinois

**IMPERIAL** Refrigeration Products  
STRAINERS • DEHYDRATORS • VALVES • FITTINGS • FLOATS • CHARGING LINES  
TOOLS FOR CUTTING, FLARING, BENDING, COILING, PINCH-OFF AND SWEDGING



**Cafeteria Models**  
**Self-contained Storage**  
**and**  
**Remote Types**  
**Shipboard and Land Use**  
**FOR**  
**Film Processing**  
**Bakery Service**  
**Drinking Water**  
**Brine Cooling**  
**War Industries**  
**All Purposes**  
**Complying with Army and Navy**  
**Specifications**  
**Immediate Shipment**

**Filtrine**  
MANUFACTURING COMPANY  
53 Lexington Ave., Brooklyn, N.Y.

## L-38 Supplemental Lists Give Conditions Under Which Items Can Be Produced

- h. Tanks, combat.  
i. Underground mines, communication rooms, air raid shelters and plants and factories, producing essential materials, where it is shown that otherwise unavoidable heat or contamination of air would be dangerous to health or result in intolerable working conditions; and then only to the minimum extent required.  
j. Waller gunnery trainers.  
k. "Jam Handy" and instrument trainer buildings, for military use.

### LIST D

Items which may not be produced for any purpose.

- Beer pre-coolers.
- Beverage dispensers.
- Bottled beverage coolers, mechanical.
- Bottled beverage coolers, non-mechanical.
- Counter and back bar refrigerators.
- Display cases, single duty.
- Display cases, double duty.
- Display cases, florist.
- Display cases, frosted food.
- Display cases, full vision.
- Display cases, vegetable.

- Display cases, all other types.
- Dough retarding refrigerators.
- Draft beer equipment.
- Evaporative coolers, 2,000 c.f.m. or less.
- Florist boxes.
- Frozen food cabinets, low temperature, not designed for use aboard ship or in mobile hospital units, including but not limited to hospital cars.
- Ice cream cabinets, not designed for use aboard ship.
- Ice cube makers, self-contained cabinet type.
- Salad coolers (Bain Marie), mechanical.
- Drinking water coolers, mechanical, not designed for use aboard ship.
- Drinking water coolers, non-mechanical, all sizes.
- Fountainettes.
- Soda fountains, not designed for use aboard ship.
- Self-contained unit air conditioners, 2 h.p. or less.
- Wall type display refrigerators.
- Farm freezers (for the freezing and storing of food on a farm).

### LIST E

Items which may be produced only for specific purchasers and/or purposes:

#### Type of Equipment

- Drinking water coolers, mechanical, designed for use aboard ship.
- Frozen food cabinets, low temperature designed for use aboard ship or for use in mobile hospital units.
- Ice cream cabinets, designed for use aboard ship.
- Ice cream freezers, 20 quart capacity or less.
- Evaporative coolers, over 2,000 c.f.m.
- Mortuary refrigerators.
- Portable bulk ice makers.
- Soda fountains, designed for use aboard ship.

#### Production Permitted for Direct Use By:

- Army, Navy, Maritime Commission, or War Shipping Administration.
- Army, Navy, Maritime Commission, or War Shipping Administration, for use aboard ship or for use in mobile hospital units, including but not limited to hospital cars.
- Army, Navy, Maritime Commission, or War Shipping Administration for use aboard ship.
- Army or Navy, for use aboard ship or advanced bases.
- Army or Navy.
- Army or Navy.
- Army, Navy, Maritime Commission, or War Shipping Administration, for use aboard ship.

### LIST F

"Comfort cooling system" means any system, of any size, operated or installed for the purpose of lowering the temperature and/or humidity of air in any building, room or other enclosure used as, or located in any of the following:

- Amusement parks.  
Animal hospitals.  
Auditoriums.  
Ballrooms, dancing studios, and dance halls.  
Banks and loan associations.  
Bars, cocktail lounges, and beer parlors.  
Bowling alleys.  
Concert halls.  
Funeral parlors.  
Golf clubs, country clubs, and athletic clubs.  
Hotels and apartment houses.  
Moving picture houses.  
Night clubs.  
Office buildings and offices, public or private.  
Railway, streetcar and bus stations and terminals.  
Residential buildings and dwellings of all kinds.  
Restaurants, cafeterias, and other places selling meals, food or beverages.

### Schools.

Service establishments, such as laundries, cleaners and dyers, tailor shops, barber shops, "beauty" parlors, automobile sales and service shops, and repair shops of all kinds.

### Skating rinks.

Stores, selling any kind of products, material or merchandise, at retail or wholesale (excluding manufacturing establishments).

### Theaters.

The term "comfort cooling system" shall not include (i) any such system used to air condition a building, room or other enclosure used chiefly for purposes not listed above, or (ii) any system designed, necessary and used, in substantial part for the refrigeration and storage or processing of food, ice (except in skating rinks), or other materials or products requiring refrigeration, temperature control, or freedom from dust or other impurities, or (iii) such part of a system as may be necessary and used for the circulation of air, or necessary and used for raising the temperature of air during cold weather to a degree which is comfortable or tolerable for persons (comfort heating).

quired specifications established by paragraph (b) (1) of this schedule shall apply to all refrigerant and service connections. Provided, however, That the foregoing shall not prohibit:

(i) The use of copper or copper base alloy pipe or tubing for refrigerant or service connections on refrigeration or air conditioning systems to be used aboard ship or at advanced bases by the Army or Navy of the United States, the Maritime Commission, or the War Shipping Administration; or

(ii) The use of copper or copper base alloy pipe or tubing for refrigerant or service connections on refrigeration or air conditioning systems, the plans of which had on April 6, 1943, been drawn and accepted by or for the account of the Army or Navy of the United States, the Maritime Commission, or the War Shipping Administration, to the extent that such plans require construction, design or materials not in accordance with the provisions of this schedule.

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### POSITIONS WANTED

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### EQUIPMENT WANTED

ICE CREAM cabinets, frozen food cabinets or cabinets only without units, any type or condition. State age, dimensions, price and type of system in communication. We need domestic and commercial units or any quantity of useable refrigeration parts. Give full details. FEDERAL APPLIANCE SERVICE, 1250 Riverbed, Cleveland, Ohio. Cherry 8170.

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## Schedule V To L-126 - - Commercial Boxes

### Part 1071—Industrial and Commercial Refrigeration and Air Conditioning Machinery and Equipment.

[Schedule V to Limitation Order L-126] Required Specifications for Commercial Reach-In and Walk-In (Pre-Fabricated Sectional) Refrigerators.

§ 1071.7 Schedule V to Limitation Order L-126—(a) Definitions. For the purpose of this schedule:

- (1) "Producer" means any person who produces, manufactures, processes, fabricates or assembles commercial reach-in or walk-in (pre-fabricated sectional) refrigerators.
- (2) "Commercial reach-in refrigerator" means an insulated enclosure designed for non-mechanical (iced) refrigeration or mechanical refrigeration and furnished with or without low (pressure) side or high (pressure) side, having one or more service doors, and of such dimensions that the products to be refrigerated are within convenient reach of a person outside of the enclosure. This term does not include:
- (i) A domestic mechanical refrigerator as defined in paragraph (a) (4) hereof, or
- (ii) A domestic ice refrigerator as defined in paragraph (a) (5) hereof, or
- (iii) Enclosures that contain facilities for the primary purpose of displaying the products refrigerated, or
- (iv) Enclosures designed for the storage of frozen food or the quick freezing of food.

(3) "Commercial walk-in refrigerator" means a pre-fabricated or sectional insulated enclosure, designed for non-mechanical (iced) refrigeration or mechanical refrigeration and furnished with or without low (pressure) side or high (pressure) side, having one or more entrance doors and of such dimensions that the products to be refrigerated, or the major portion thereof, are not within convenient reach of a person outside of the enclosure. The term does not include enclosures designed for the storage of frozen food or the quick freezing of food.

(b) Required specifications. Pursuant to Limitation Order L-126, the following required specifications are hereby established for commercial reach-in and walk-in refrigerators:

- (1) No producer shall:
- (i) Manufacture any commercial reach-in refrigerators except in the following sizes:

vol. space cu. ft.	Shelf area sq. ft.	Outside dimensions Width Depth Height	No. of service doors
20	30	50" 28" 80"	2
45	60	68" 34" 80"	4
65	70	90" 42" 74"	5
85	100	115" 34" 80"	8

Provided, That a variance of  $\frac{1}{4}$ " from the width, depth, and height, and a corresponding variance in the inside volume, shall be permissible, and the condensing units used in each of said sizes shall be contained within such refrigerators ("self-contained").

- (ii) Manufacture any commercial walk-in refrigerators except in the following sizes:

Size (outside)	Number of service doors	Number of walk-in or entrance doors
6'x8'x7'6" high	2	1
6'x8'x7'6" high	3	1
8'x8'x7'6" high	None	1
8'x10'x7'6" high	None	1
10'x12'x7'6" high	None	2
10'x16'x7'6" high	None	2
10'x20'x7'6" high	None	3
10'x24'x7'6" high	None	3
10'x30'x7'6" high	None	3

- (iii) Use any non-ferrous metals in the manufacture of commercial reach-in and walk-in refrigerators except for the following, when used, (and when not pro-

hibited by the terms of any other order or any other schedule issued pursuant to Limitation Order L-126):

- (a) High (pressure) side or condensing unit.
- (b) Refrigerant connections between high (pressure) side and low (pressure) side.
- (c) Electric current carrying apparatus.
- (d) Controls and valves, or
- (e) Galvanized coating on ice bunker, (in non-mechanical types).
- (iv) Use any ferrous metals in the manufacture of commercial reach-in and walk-in refrigerators except for the following, when used, (and when not prohibited by the terms of any other order or any other schedule issued pursuant to Limitation Order L-126):
- (a) High (pressure) side or condensing unit.
- (b) Low (pressure) side or evaporator.
- (c) Bolts, nuts, washers, nails, screws, door hinges, door fasteners, and meat hooks.
- (d) Drains and drip pans.
- (e) Thresholds.
- (f) Ice bunkers, (in non-mechanical types).
- (g) Floors clad with metal not heavier than 22 gauge, or
- (h) Wire mesh for rodent proofing.

(c) Applicability of order. (1) The required specifications established by paragraph (b) (1) shall not prohibit:

- (i) The production, delivery, and acceptance of commercial reach-in refrigerators, which are not in conformity with paragraph (b) of this schedule for use aboard ship by the United States Army or Navy, the Maritime Commission, or the War Shipping Administration, or
- (ii) The production, delivery and acceptance of commercial walk-in refrigerators, which are not in conformity with paragraph (b) of this schedule for use aboard ship or at advanced bases by the Army or Navy of the United States, the Maritime Commission or the War Shipping Administration.

(iii) The production, delivery, and acceptance of commercial reach-in and walk-in refrigerators delivered within 90 days, after April 6, 1943, to or for the account of, and for direct use of the United States Army or Navy, the Maritime Commission or the War Shipping Administration to the extent that applicable specifications of any such organization require construction, design or materials not in accordance with the provisions of this schedule, or

(iv) The delivery and acceptance of commercial reach-in and walk-in refrigerators which were in a producer's stock in finished form on April 6, 1943.

(v) The production, delivery, and acceptance of commercial reach-in and walk-in refrigerators produced from fabricated parts which were in a producer's stock on April 6, 1943.

## Schedule VI Connections

### Part 1071—Industrial and Commercial Refrigeration and Air Conditioning Machinery and Equipment.

[Schedule VI to Limitation Order L-126] Required Specifications for Refrigerant and Service Connections

Section 1071.8 Schedule VI to Limitation Order L-126—(a) Definitions. For the purpose of this schedule:

- (1) "Refrigerant connections" means any pipe or tubing joining an evaporator, compressor, condenser, or receiver in the same refrigeration or air conditioning system. As used in this schedule, the term "refrigerant connection" refers only to such connections to be used in a "system" as defined in paragraph (a) (1) of Limitation Order No. L-126.

(2) "Service connection" means any pipe or tubing joining any part of a refrigeration or air conditioning system to a water or drain outlet. As used in this schedule, the term "service connection" refers only to such connections to be used in connection with a "system" as defined in paragraph (a) (1) of Order No. L-126.

(3) "Self-contained" means any refrigeration or air conditioning system where the high (pressure) side and low (pressure) side are contained within the same enclosure in such a manner that the complete system can be removed from the premises without disconnecting any refrigerant containing part.

(b) Required specifications. Pursuant to Limitation Order L-126, the following required specifications are hereby established for refrigerant and service connections:

- (1) No person shall use copper or copper base alloy pipe or tubing for:
- (i) Any refrigerant connection, except that such pipe or tubing not larger than  $\frac{3}{4}$ " size (O.D.) may be used, in a "self-contained" system, or as permitted in subparagraph (b) (1) (ii) of Schedule II to Limitation Order L-126, or where such refrigerant connection does not exceed fifteen (15) feet in length; or
- (ii) Any service connections.
- (c) Applicability of order. (1) The re-

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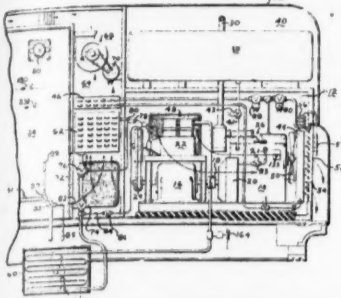
**RANCO Inc.** Columbus, Ohio



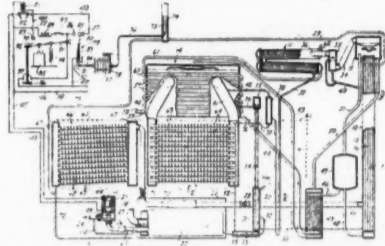
## PATENTS

Weeks of Feb. 23 &  
March 2

**2,311,622. REFRIGERATING APPARATUS.** Donald F. Alexander and Richard E. Gould, Oakwood, and James R. Hornaday, Dayton, Ohio, assignors to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Aug. 3, 1940, Serial No. 350,700. 11 Claims. (Cl. 62-117).

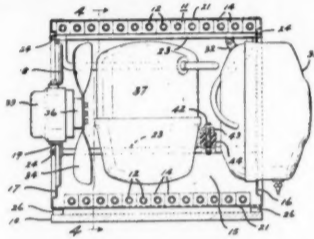


**2,311,711. REFRIGERATION.** Albert R. Thomas, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Aug. 3, 1940, Serial No. 350,239. 10 Claims. (Cl. 62-5).



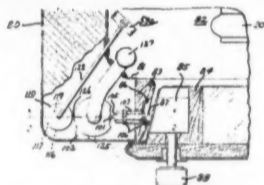
1. In a refrigeration system operated by heat and having a heat receiving part provided with a chamber, a conduit connected to supply steam to said chamber from a source of supply, said chamber having a vent to atmosphere, and a device responsive to a condition affected by flow of steam through said vent from the chamber into the atmosphere for controlling flow of steam through said conduit.

**2,311,947. REFRIGERATING APPARATUS.** Andrew A. Kueher, Oakwood, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Oct. 30, 1941, Serial No. 417,173. 8 Claims. (Cl. 62-115).



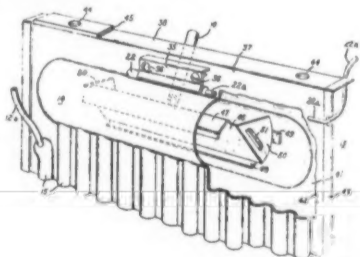
1. A refrigerant liquefying unit comprising, a condenser having its convolutions formed about a horizontally extending axis to enclose and provide walls of a compartment, the convolutions of said condenser being spaced apart to provide openings in said compartment walls along the length thereof, a casing within said compartment containing a motor and a compressor, said casing having its axis disposed in perpendicular relation to the axis of said compartment, means for closing one end of said compartment, means adjacent the other end of said compartment for circulating air horizontally thereto, and the openings along the length of said compartment walls providing passages for the flow of air out of the compartment in a lateral direction relative to the axis thereof for cooling said condenser.

**2,311,975. REFRIGERATING APPARATUS.** Carl A. Stichel, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Jan. 28, 1939, Serial No. 253,419. 5 Claims. (Cl. 62-89).



4. A cabinet having a door opening and a door for closing the opening, latch means for latching the door and closed position, operating means for operating the latch means and means energized coincidentally with the operation of the operating means for hydraulically forcing a liquid into said cabinet.

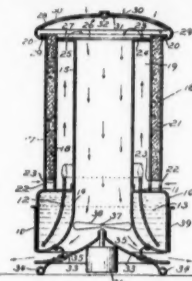
**2,312,087. REFRIGERATING APPARATUS.** Edward E. Fitzgerald, Schenectady, N. Y., assignor to General Electric Co., a corporation of New York. Application March 8, 1941, Serial No. 382,415. 1 Claim. (Cl. 62-8).



A refrigerating machine including a cabinet having a compartment to be cooled, an evaporator arranged in the upper portion of said compartment for cooling the air therein and for providing a freezing portion, said evaporator comprising walls constructed of a metal of low thermal conductivity and formed to provide a header and a depending refrigerant circulating conduit therein, said wall having an upright portion above said header for securing said evaporator in said compartment, baffling means arranged within said header for providing a quiet zone of liquid refrigerant therein, means for supplying refrigerant to and for withdrawing refrigerant from said evaporator, and a control means including a temperature responsive element secured to said evaporator adjacent said upright wall and immediately above said quiet zone for controlling the operation of said refrigerant supplying and with-

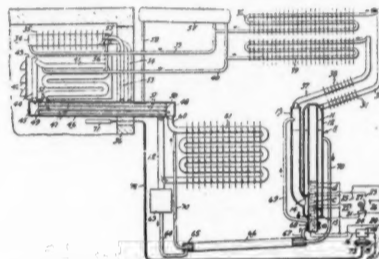
drawing means, the operation of said evaporator providing a substantial gradient between the temperature of said upright portion and the temperature of said freezing portion, the temperature of said element lying along said gradient intermediate said temperatures whereby said control provides operation of said evaporator to maintain the temperature thereof sufficiently low to compensate for increases in the temperature of the air in said compartment.

**2,312,123. HEATING AND AIR CONDITIONING UNIT.** Bion C. Place, Detroit, Mich. Application Jan. 4, 1940, Serial No. 312,437. 7 Claims. (Cl. 126-110).



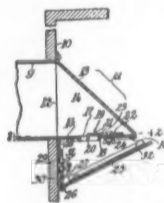
1. An air heater comprising a series of vertical concentric spaced walls, the space between the inner two walls forming an annular combustion chamber, and the two outer walls providing a double-walled casing; a burner adjacent the lower part of said combustion chamber, the inner wall forming a central passageway open at the bottom and communicating at the top with said combustion chamber, a closure adjacent the top of said walls forming part of the communication between said chamber and passageway; adjustable air inlet means in said closure; means adjacent the bottom of said central passageway for drawing combustion gases from said chamber downwardly into said passageway and air through said air inlet means to cool the upper part of said heater and temper said gases, and a deflector means below said passageway for distributing the heated air horizontally in all directions.

**2,312,144. REFRIGERATION.** Gustav Marten Blomqvist, Stockholm, Sweden, assignor, by mesne assignments, to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Feb. 3, 1940, Serial No. 317,056. 18 Claims. (Cl. 62-5).



1. In an absorption refrigerating apparatus, a pair of generators connected together for series flow of liquid there-through, means for supplying absorption solution rich in refrigerant to the first generator, means for withdrawing absorption solution weak in refrigerant from the second generator, a low temperature evaporator, a higher temperature evaporator, conduit means for connecting said first generator to said low temperature evaporator, conduit means for connecting said second generator with said higher temperature evaporator, a condenser disposed in each of said conduit means, and means for controlling refrigerant vapor expulsion in said generators.

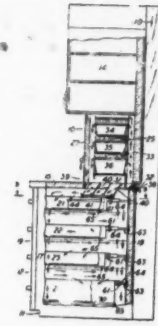
**2,312,272. AIR DISTRIBUTING APPARATUS.** Alfred E. Stacey, Jr., Essex Falls, N. J., assignor to Buensod-Stacey Air Conditioning, Inc., New York, N. Y., a corporation of Delaware. Application Sept. 11, 1933, Serial No. 294,275. 7 Claims. (Cl. 98-40).



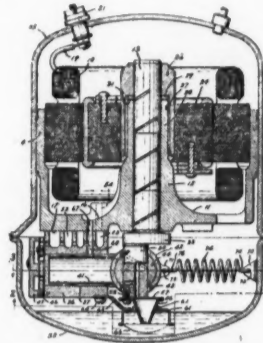
1. An outlet for an air conditioning system comprising a casing adapted to be mounted within a room above the zone of occupancy thereof and to be connected to a source of intensely conditioned air, said casing having a bottom wall with an orifice therein and a nozzle projecting from its lower surface around said orifice through which conditioned air may discharge downwardly at high velocity, and a splash plate disposed beneath and spaced from said bottom wall to intercept issuing air and to disperse it across the room, an element connecting said splash plate and said casing, said splash plate being hinged to said element for movement about a horizontal axis to control the direction of flow of air across the room, and said element being slidably attached to a part of said bottom wall so that the distance between splash plate and said bottom wall may be varied, and a plurality of vertical vanes pivotally attached to the splash plate on its upper side to control the discharge of air in a horizontal direction.

**2,312,326. REFRIGERATOR.** Gayon L. C. Earle, Forest Hills, N. Y., assignor to Genevieve M. Earle, Forest Hills, N. Y. Application Nov. 9, 1940, Serial No. 365,029. 5 Claims. (Cl. 62-89).

1. In a refrigerator having a lower deep refrigerated portion and an upper set-back refrigerated portion, an evaporator in said upper portion, a deflecting means having spaces between portions thereof to deflect a portion of the cold air from said evaporator to the front part of said lower portion and to allow another portion of said cold air to pass through the spaces in said means to cool the rear part of said lower portion, and a container, said deflecting means having guide means to conduct the water of defrosting into said container.



**2,312,586. REFRIGERATING APPARATUS.** Rolf M. Smith, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Feb. 27, 1940, Serial No. 321,078. 6 Claims. (Cl. 230-53).

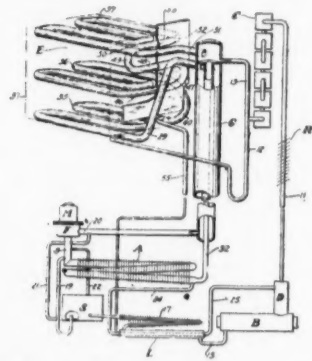


1. A sealed unit comprising, a casing having a motor and a compressor directly connected to said motor mounted therein, said casing being under compressor discharge pressure, said motor including a shaft having an eccentric portion, said compressor including a cylinder and a piston disposed therein, means connecting said piston to said eccentric portion of said shaft for reciprocating the piston within said cylinder when said motor is operated, and means having a part attached to said connecting means and another part thereof attached to said casing for applying force to said piston at least in the direction of movement of the piston outwardly relative to its cylinder.

**2,312,619. REFRIGERATION.** Milo E. Bixler, North Canton, Ohio, assignor to the Hoover Co., North Canton, Ohio, a corporation of Ohio. Application Jan. 25, 1939, Serial No. 252,745. 21 Claims. (Cl. 62-119.5).

17. Refrigerating apparatus having a freezing unit arranged to support and refrigerate a horizontal receptacle sup-

porting shelf, a flat vertically extending air-cooling unit positioned laterally of one side of said freezing unit and in spaced relationship thereto, a vertically extending heat conducting plate arranged in heat conducting relationship with said air-cooling unit and positioned laterally of and in spaced relationship to the said one side of said freezing unit to form an air passageway between said plate and said



freezing unit and to allow air to flow in contact with both side of said plate, and means for supplying a cooling medium to each of said units.

(To Be Continued in April 12 Issue)

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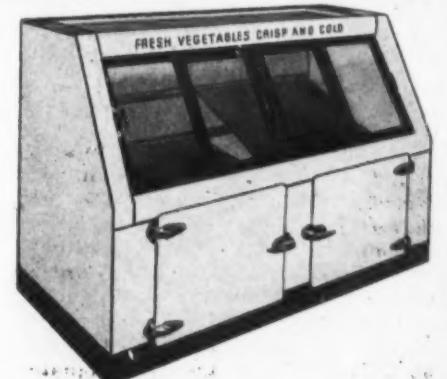
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## Analysis of L-38 Shows It Touches Every Phase Of Commercial Refrigeration Activity

(Concluded from Page 1, Column 5)  
List C of the order. The filing of such application shall relieve the applicant from the necessity of filing an application form for any component part required by Order L-100, L-163, or L-172.

To obtain an "authorized order" application must be made to the War Production Board on Form PD-830 if equipment is industrial refrigeration or air conditioning equipment and on Form PD-831 if equipment is small commercial refrigeration equipment and machinery such as commercial refrigerators and related equipment.

Applicants are urged to start using the forms, PD-830 and 831 promptly. It is pointed out that dealers and producers may deliver equipment to the persons who have placed purchase orders, authorized on Forms PD-1A, PD-200, or PD-408 during the 10-day period following issuance of this amended order. Such action will avoid the necessity of having the applicant reapply for authorization to purchase the equipment on order.

Delivery of new equipment from producer to producer or producer to dealer is not affected.

Reach-in and walk-in refrigerators may only be produced for direct use by the Army, Navy, Maritime Commission, or War Shipping Administration. Such refrigerators for civilian use may be produced only from parts or materials owned by the producer on April 6, 1943. A producer of such refrigerators may sell parts or materials to another producer for assembly into complete refrigerators.

### PRODUCTION OF PARTS

The production of replacement parts is limited to such quantities that will not be in excess of a producer's average monthly inventory of similar parts during the months of January, February, and March, 1941.

L-38 does not prohibit a bottler of carbonated beverages, a manufacturer of ice cream for resale or a person engaged in the business of leasing drinking water coolers from using repair parts, owned by him on May 15, 1942, or parts obtained by dismantling used equipment, to repair equipment owned by him and used in dispensing food or beverages at retail.

A dealer or producer may loan a new or used system or part to an owner for emergency repair service for a period of 30 days unrestricted by this order.

New or used drinking water coolers owned by a person engaged in the business of leasing water coolers on May 15, 1942, may deliver such coolers unrestricted by this order.

Drinking water coolers, not designed for use aboard ship, may be assembled from fabricated parts on hand and such parts may be delivered by any producer to another producer.

The appeals clause in the order provides that any appeal under this order will also include any applicable appeal from Conservation Orders M-9-c or M-126.

### PARTS FOR 'COMFORT COOLING'

No new or used parts may be delivered for the repair of a "comfort cooling system" except under one of the following conditions:

(a) to fill an order bearing a preference rating of AA-4 or higher providing the sales value of the part or parts does not exceed \$25 for systems 20 hp. or less, \$50 for systems 20 to 100 hp., and \$100 for systems over 100 hp. The owner or user of a "comfort cooling system" may apply to his local WPB Office for such a preference rating.

(b) to fill an "authorized order" if the value of the part or parts is more than in (a) above. No such order will be authorized unless it is demonstrated to the satisfaction of the Director General for Operations that the continued operation of such "comfort cooling system" is essential to avoid air conditions which would be actually intolerable or dangerous to health.

Items of equipment on List A may be delivered unrestricted by this Order, including condensing units acquired for use with such equipment except the remote type of units over 1/2 hp.

Items on List B, Part I, may only be delivered on an "authorized order" to the agency or person designated on this list.

Items on List B, Part II, may only be delivered to an agency designated

on the list and the designated agency may obtain such item without an "authorized order."

The delivery of any new refrigerating or air conditioning system of any size or any used high side, compressor, turbo blower, condensers, low side, or evaporator designed for use with a system rated at 3 hp. (or tons) or larger, or any new "industrial type extended surface heating equipment," or any new "industrial type humidifying equipment," shall only be made, to a person acquiring the same for use, pursuant to an "authorized order," or for direct use by the Army, Navy, Maritime Commission, or War Shipping Adminis-

tration. Equipment delivered for the direct use by these agencies does not include equipment purchased by contractors for the use of such agencies nor does it include equipment purchased by a defense plant operated for the exclusive use of these agencies. This is exclusive of the systems or items on List A, or List B, or farm milk coolers.

The delivery of any new parts (other than for "emergency repair service") shall only be made pursuant to an "authorized order." Such parts include, but are not limited to, controls, valves, floats, tubing, filters, strainers, coils, etc., which may be used to recondition or redesign an existing refrigeration or air conditioning system or may be used in a larger assembly therefor.

Application on Form PD-830 or PD-831 for authorization to purchase the equipment described above will be considered only if it is to be used

for an essential use as described on List C of the order.

Every producer on or before April 10 and on the 10th of each succeeding calendar month must file a letter showing orders accepted by him in the preceding calendar months to be delivered to and for the direct use by the Army, Navy, etc.

### RULES ON PRODUCTION

The production of new refrigerating and air conditioning equipment is restricted to either the number of such new items for which a producer has unfilled orders bearing a rating of AA-4 or higher or the number of such new items delivered on orders bearing a preference rating of A-1-J during the preceding calendar quarter.

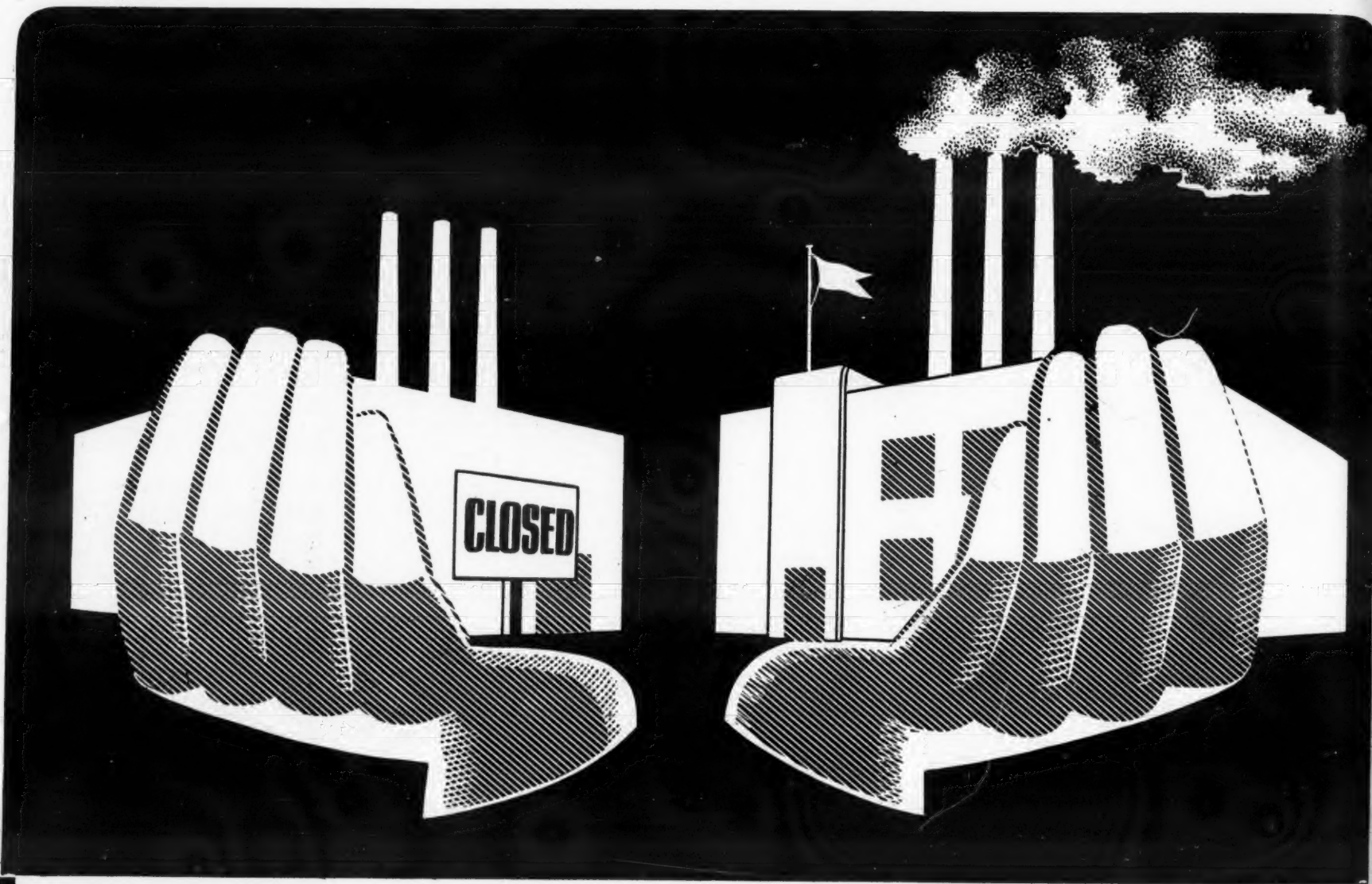
A producer may schedule his production of replacement parts as if the orders therefor bore a rating of AA-1. The delivery by a producer

of component parts of sub-assemblies is prohibited to another producer for incorporation into larger assemblies or systems if such an assembly or system is prohibited by this order.

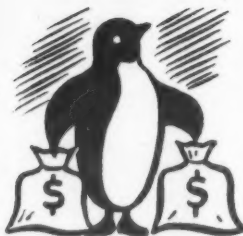
On or before April 15, 1943, every producer shall file on Form PD-829 a report of inventories of specific equipment as required by this form.

The order will not prohibit a bottler of carbonated beverages, a manufacturer of ice cream for resale or a person engaged in the business of leasing drinking water coolers from using repair parts, owned by him on May 15, 1942, or parts obtained by dismantling used equipment, to repair equipment owned by him and used in dispensing food or beverages at retail. Such equipment shall be limited to types on List A or List B.

Single duty and double duty display cases may be assembled from fabricated parts on hand during a period of 60 days beginning April 6,



## IT'S UP TO YOU...



What's going to happen after the war? Most forecasts are guesswork, of course... but here's one that is fact.

First... production will drop temporarily while manufacturers scramble for former products and markets... and all the new products and markets they can lay hands on.

Second... production will concentrate in possession of the most efficient producing units... plant, management and personnel.

Can you think of any single factor which contributes more to efficiency of plant and personnel... any single factor better calculated to appeal NOW to smart and far-sighted management... than cooling equipment with its

hundreds of industrial applications?

So it's up to you... In your hands, to a large degree, lie the futures of the industrial plants in your community. Will they be ready for the quick shift to peace production? Will they possess the healthy, contented personnel... the time and money saving processes... which industrial cooling provides? Will they acquire these valuable assets NOW... while they are still available for war production?

Upon the answers to these questions depend their futures... and perhaps yours. Upon the answers to these questions depend how effectively they... and you... will compete for the business of the post-war world. That business will be tremendous. The rewards will be large. But BOTH will be reserved for business men who look ahead... and act accordingly.

It's up to you...

**BUSH** MANUFACTURING CO.  
*Commercial Cooling Units*

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